JULY 3 1959

PETROLEUM WEEK

A McGRAW-HILL PUBLICATION

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INSIDE *Slant*

"POOR BOY" OPERATION

Actual and threatened competition from imports, gas, and other energy sources, in the long run, tend to impose ceilings on crude prices.

The Efficient Recovery Committee of the Independent Petroleum Assn. of America feels the only way to cope with this is to reduce costs.

But research in the fields of exploration, development drilling and production is a "poor boy" operation in the opinion of the committee.

This, the committee says, will not get the job done. What is needed is research that will lead to break-through innovations and to evolutionary innovations.

The group reports there are several possible blue-sky break-through innovations which, if successfully developed, would contribute importantly to lowering wellhead costs. Among them:

(1) A direct method of locating oil prior to drilling.

(2) A revolutionary method of rapid (and low-cost) drilling.

(3) A recovery technique that would effect recovery of all oil in place and which is largely indifferent in its applicability to the wide variability of reservoir characteristics.

LeRoy Menzing
EDITOR

OBJECTIVE •• OIL

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DEPT/Opinions

Views That Make News . . .

"Judge Carter's approach [in the West Coast antitrust suit], if adopted by other judges, might mean the end of the marathon antitrust trials of the past.

"In most antitrust suits, the defendants cannot live with the relief asked for by the government. If the courts examine the relief asked for and state how far they are prepared to go, all parties can sit down realistically and with the knowledge of what is really involved."

—MOSES LASKY
Attorney
Union Oil Co. of California

"Availability of energy has shaped man's destiny from the beginning and will continue to do so.

"The advancing rate of demand for energy leaves no doubt that, over the long pull, the future of oil is bright.

"In fact, the ability to supply the continuing demand for energy will be a challenge our industry must meet."

—D. A. MCGEE
President
Kerr-McGee Oil Industries, Inc.

"Many American oil men today are highly perplexed. They feel much like Winston Churchill when, after heroically leading his country through a fight for its survival, he found himself turned summarily out of office . . .

"There is no shortage of prominent Americans to testify to the petroleum industry's tremendous and vital contributions to both the wartime and peacetime economy of this nation . . .

"Having turned in this kind of record, oil men are somewhat baffled by widespread attacks on percentage depletion, one of the key factors which has made this performance possible."

—FRANK M. PORTER
President
American Petroleum Institute

"If our objective is to be trade—and not aid—American industry and finance, and private commercial interests, will, of necessity, have to assume a constantly increasing share of the responsibility for overseas development."

—T. S. PETERSEN
President
Standard Oil Co. of California

"We have been accused of being a big industry. We are a big industry. Perhaps it is time we stopped being coy about that fact. It would take a great many fingers and toes to count the contributions that the many branches—both large and small—of our industry have made to our nation's economy."

—R. S. BLAZER
Chairman
Ashland Oil & Refining Co.

. . . and Letters

Dear Sir:

I wish to make answer to your editorial headed "Name Calling Won't Win Friends" [PW—May22'59,p48]. I have worried over this editorial because I believe it to be directed at people like myself who are not in the crude producing segment of the industry, and who sometimes complain about the use of the 27½% depletion allowance by major companies.

As for the depletion allowance, I would dislike very much to see it reduced, because I believe it to be quite important. But I also believe that it should be controlled.

I am not sure who H. S. M. Burns, president of Shell Oil Co. and chairman of the American Petroleum Institute, was talking about when he addressed the Independent Petroleum Assn. of America [on name-calling]. But if Burns was referring to the independent marketer as the member of the petroleum family who is distorting public opinion at the expense of the industry, he is mistaken.

The independents have never asked for aid except when caught in a severe squeeze.

We are a real part of the industry, and we cannot sit idly by in the face of certain ruin without looking for help somewhere.

As victims of an adversary with "money and guts," we will have to scratch, kick, and bite to protect ourselves from injuries we feel are being inflicted on us by major companies.

Let's see if the big segment of the industry has the guts to straighten out industry differences without serious injury to those who would enjoy being its friends—the independents.

JAMES A. HOGSHIRE
President
Wake Up Oil Co.
Indianapolis

PETROLEUM WEEK *will publish reader comments each week. Address letters to LeRoy Menzing, Editor,* PETROLEUM WEEK, *330 W. 42nd St., New York 36, N. Y.*

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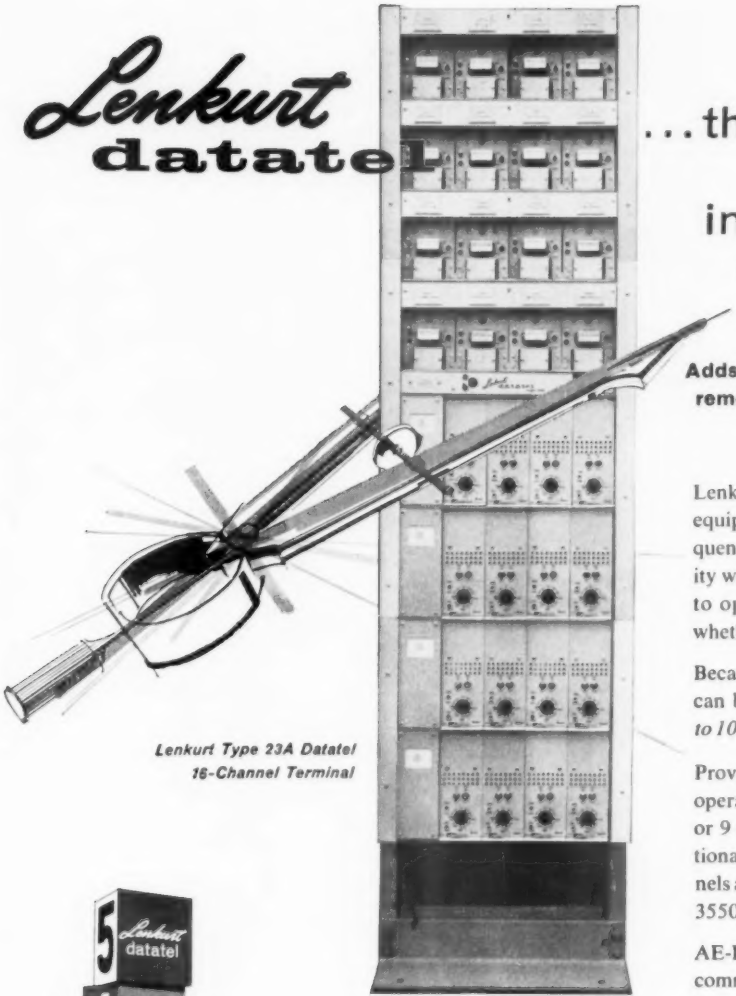

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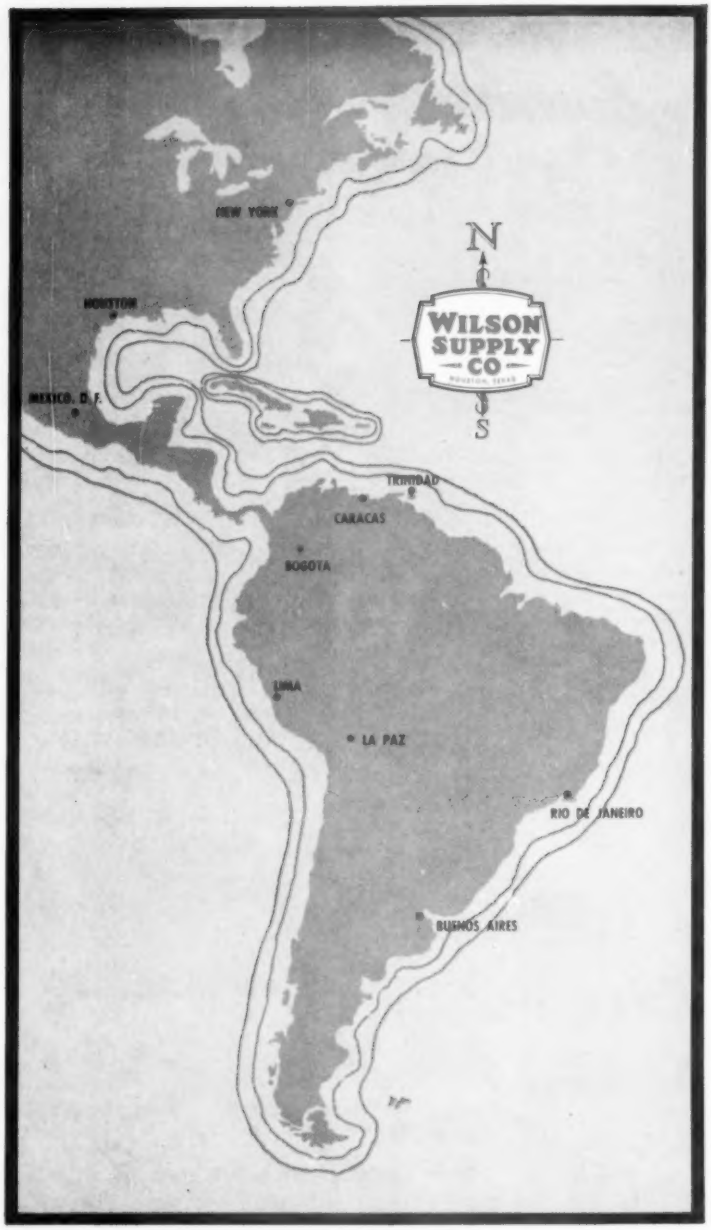

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60-Second Summary / WHAT'S HAPPENING IN OIL

July 3, 1959

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Coal men have quit taking it on the chin. A new organization is going to spend several hundred thousand dollars fighting both oil and gas for lost markets. . . . p. 15

•

The Sahara's Hassi Messaoud is turning out to be as big as a good-sized Middle East oil field. And France is wasting no time in developing the vast area, where reserves are officially estimated at 15.3-billion bbl. . . . p. 36

•

Will the Supreme Court decision in the CATC offshore gas case help or hinder gas sales? The "fuzzy" ruling leaves gas men in doubt, but fearful that delays and more price-conditioned contracts are coming. . . . p. 11

•

A "can't lose" exploration deal is making the land rush in the Arctic Archipelago doubly attractive. It's termed "the last cheap land play in the world." . . . p. 20

•

Western Europe is warming up to oil heat. Consumption is spiraling, and the potential is big, despite cheaper coal. About 250,000 oil-fired units may be installed this year alone. . . . p. 34

•

Light liquid hydrocarbons are being tapped for acetylene and ethylene. An old process is getting a rebirth, due to higher prices for natural gas and declining values of natural gasoline and light naphthas. . . . p. 31

•

Field trials with the abrasive jetting technique are getting good results. Engineers say the method is "an unbeatable combination" for perforating, cleaning pay faces, and enlarging well bores. . . . p. 24

•

The continued challenges to individual import allocations could lead to changes in the regulations. One court suit has raised a serious legal question, yet to be decided. And a growing number of companies are appealing for substantial exemptions. . . . p. 13

•

Welded steel tubes for heat exchangers are making a come back with refiners. Higher quality, lower cost (by 10% to 30%), and tighter inspection controls are dislodging former prejudices. . . . p. 32

•

Analysis of used lubricating oil may prevent costly compressor-engine overhauls, a two-year test by the American Gas Assn. shows. . . . p. 44

Up to the Minute / SIGNIFICANT LATE NEWS

AT-A-GLANCE PETROLEUM WEEK Copyright

July 3, 1959

A gas discovery has been made 55 mi. off the Louisiana Coast, in Block 207 of the Eugene Island area. The discovery, on the west flank of the Block 208 dome, is owned jointly by Pan American Petroleum Corp. and Texaco, Inc.

•

A dispute over job classifications precipitated a strike this week at the Texas City (Tex.) and El Dorado (Ark.) plants of American Oil Co. The walkout began Tuesday midnight, with the shutdown expected to be complete by this weekend.

•

Only six companies of the 81 that filed appeals on import allocations received adjustments in the Mar. 11-June 30 period. The Oil Import Appeals Board issued only 34 decisions; the remainder were dismissed or withdrawn. Hearings for the July-December period will start soon.

Total imports in May ran slightly below the level permitted by mandatory control and exemptions, according to Oil Imports Administration data. Total crude and products imports averaged 1.4-million b/d for the month. Crude and unfinished oils imported east of the Rockies averaged 762,185, just slightly under the maximum.

•

Superior Oil Co. was reported this week to have completed a $1-million-dollar triangular deal with Venezuela, Uruguay and Yugoslavia. The Venezuelan Ministry of Mines & Hydrocarbons said Superior will supply Venezuelan crude to Uruguay, Uruguay will supply refined products to Yugoslavia, and Yugoslavia will supply steel pipe to Venezuela.

•

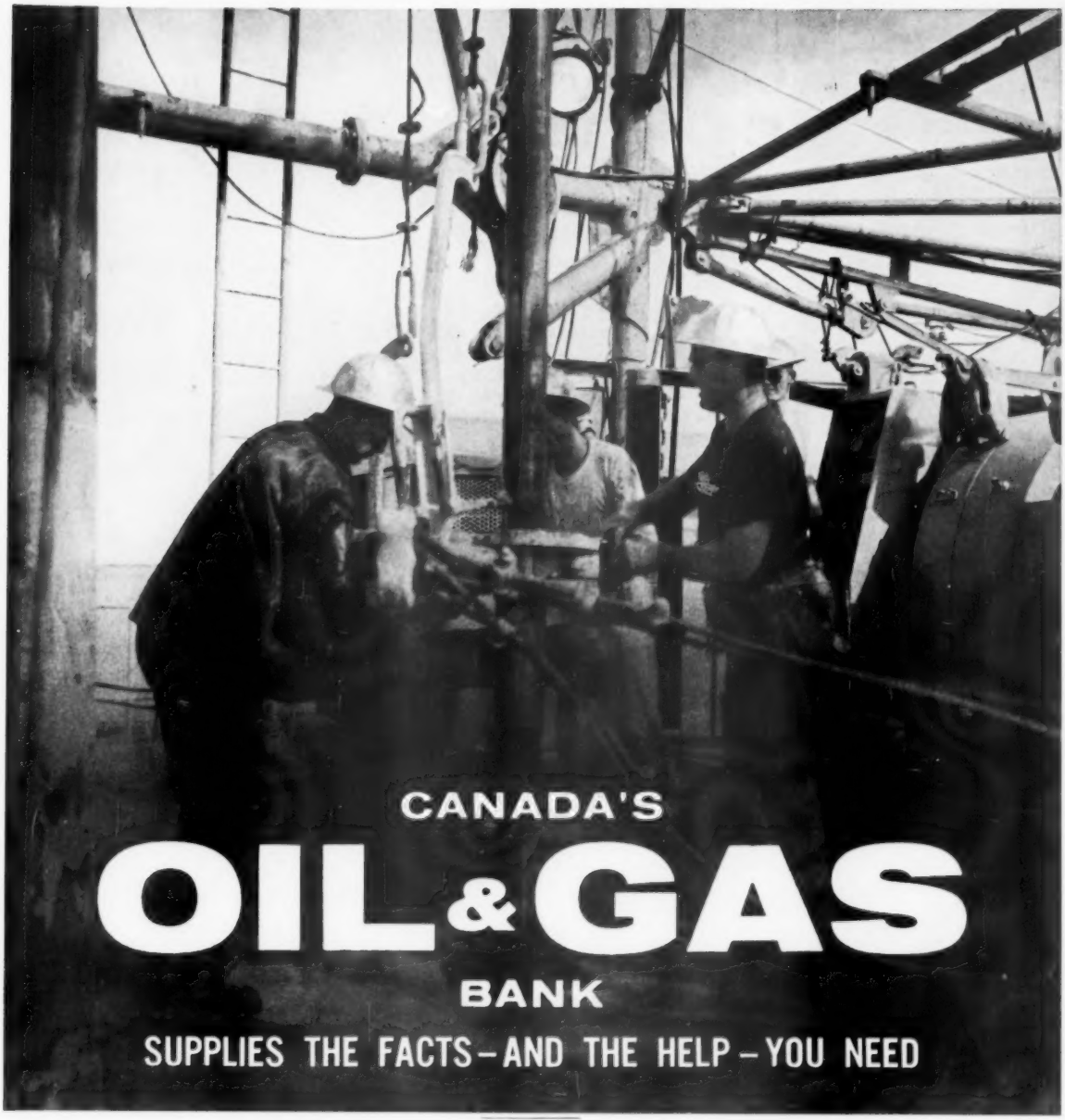
The Texas Railroad Commission is considering a $2.5-million unitizing-waterflooding program in Kent County. It would recover an additional 19-million bbl. of oil, valued at $56-million. The project was proposed by Pan American Petroleum Corp., for the S.M.S. (Canyon Sand) field, and carries the endorsement of all field operators. The field is in the intermediate stage of depletion, with 79 wells averaging 26 b/d each.

•

The Interior Dept. will offer more than 83,000 acres of Zone 2 offshore lands in the Gulf of Mexico for leasing on Aug. 11. Ownership of the area, which lies beyond the 3-mi. state boundaries, is pending a Supreme Court decision.

•

The military group trying to seize power in Argentina has announced it will abolish "unlawful oil contracts" with foreign companies. Meantime, President Arturo Frondizi has rejected the resignation of Dr. Aguirre Legaretta, president of Yacimientos Petroliferos Fiscales, the government oil company, and has named Alvaro Alsogaray, who has advocated opening the country to foreign oil companies, to be Economics Minister.



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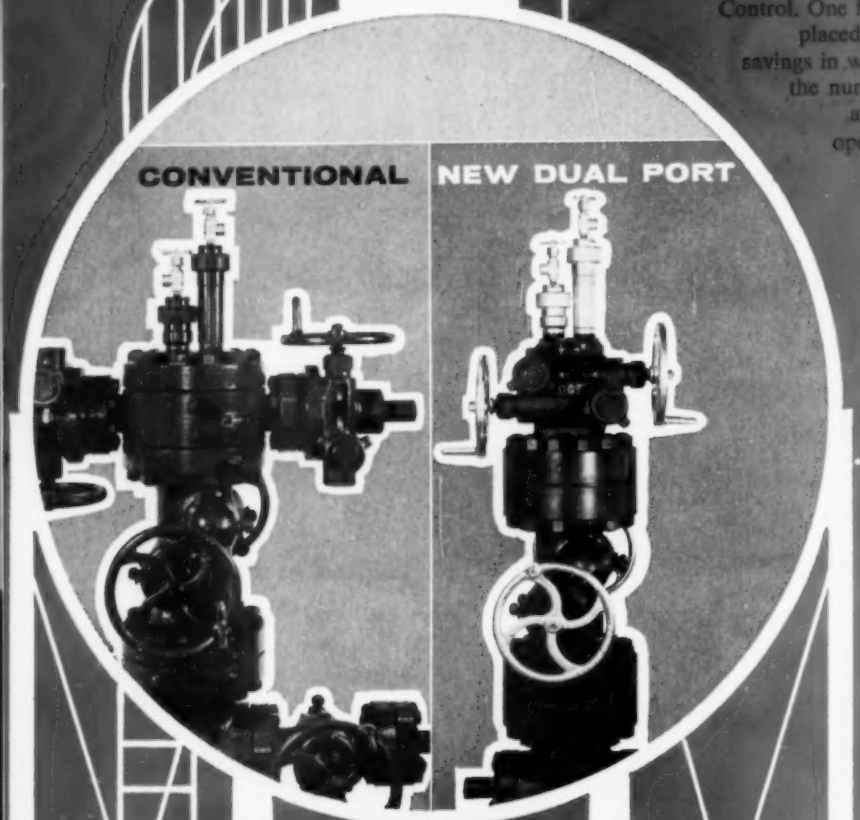

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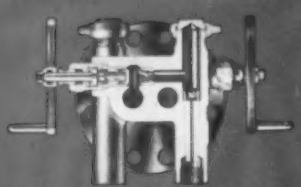

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PETROLEUM WEEK
July 3, 1959

Producers Fear Delays in Gas Sales

Supreme Court opinion in CATC rate case, they say, will require Federal Power Commission to hold up new contract certificates until initial price is set.

Producers and purchasers of natural gas believe that last week's "fuzzy" ruling by the Supreme Court of new contract prices will tend to slow sales to transmission firms.

In a unanimous ruling, the court held that the Federal Power Commission should consider the issue of price carefully before approving any new gas sales contracts (PW—Jun.26 '59,p16).

Specifically, the court disapproved an FPC policy of permitting new sales to be commenced without first approving the rate to be paid.

The ruling came in a case involving the sale of 1¾-trillion cu. ft. of gas by the CATC group to Tennessee Gas Transmission Co. at 22.4¢ per Mcf. (including a Louisiana tax of 1¢ per Mcf.).

The group—Continental, Atlantic, Tidewater, and Cities Service—had rejected a "conditioned" proposal for an initial price of 18¢ per Mcf. to be increased to 22.4¢ after the first 24-hour delivery period, under bond.

The Court's ruling is not clear to most gas men since, while it remanded one specific rate case back to the Federal Power Commission, it only directed the commission to prevent "excessive" gas prices.

In the case of the price of 22.4¢ per Mcf. asked by CATC, the court's opinion, written by Justice Tom C. Clark, stated: "We find nothing illegal in the petitioner's rejection of the alternate price proposed by the commission and their standing firm on their own."

But the court seemed most concerned over FPC's reasoning in granting approval of the 22.4¢ rate without additional hearings, after the proposed rate of 18¢ had been rejected by CATC.

According to the opinion, FPC had said, in effect, "Important as is the issue of price, . . . as far as the public is concerned, the precise charge that is made initially is less important than the assurance of this great supply of gas for interstate markets."

The most specific direction of the Supreme Court to the commission is that it should consider gas price more carefully in the future, attaching "conditions where the proposed price is not in the public interest."

The Commission is authorized by Congress, the court held, to condition price certificates as it believes necessary "in keeping with the public interest."

That means, both producers and transmission firm officials agree, that, in future cases, FPC will have to go into price matters more deeply. Most likely, this will mean requiring producers to furnish cost data on new sales.

The Court's opinion noted that, "The purpose of the Natural Gas Act was to underwrite just and reasonable rates to the consumers of natural gas."

The net effect may be, say industry attorneys, that granting of certificates to producers will now become lengthier since FPC will have to study even conditioned-price certificates more carefully.

Too, the court's ruling seemingly opens the door for more intervenors, such as state utility commissions in consuming areas and the utility firms purchasing gas for resale.

The CATC case reached the Supreme Court through just such intervenors.

In the long run, gas officials predict, producers will be "boxed in" on field prices, limited to a great extent to whatever utility-company buyers are willing to pay for new contracts.

"The attitude of producers on committing their reserves under such conditions will be interesting to watch," one transmission company official commented.

Detailed hearings and producer cost data may not be necessary if gas prices in new contracts are not out of line with prevailing rates in a particular area.

The Court's opinion gave considerable attention to the possibility that the contracted rate in the CATC-Tennessee Gas case might set a pattern "in an area where enormous reserves of gas appear to be present."

Justice Clark's opinion read: "We note that . . . the map of the Continental Shelf area off the coast of Louisiana shows that the leases here involved cover but 17 out of a blocked-out area covering some 900 blocks of 5,000 acres each. The potential of this vast acreage, in light of discoveries already made, is stupendous . . . The price certificated will, in effect, become the floor for future contracts in the area. This has been proven by conditions in southern Louisiana, where prices have now vaulted from 17¢ to over 23¢ per Mcf. [excluding tax]."

The opinion commented that new price "plateaus" will be created as new contracts are made and, "unless controlled, will result in 'exploitation' at the expense of the consumer, who eventually pays for the increases in his monthly bill."

The court ruling specifically stated that price is a consideration of "prime importance," particularly during "this formative period when the ground rules for producer regulation are being evolved."

While the court's main concern was protection of consumers against "excessive" rates, it upheld the producer's right to seek "justified" higher prices.

The court noted that gas producers, unless bound by contract, can file new rate schedules with the commission after a rate has been set. The new rate can become effective, subject to a five-month suspension, as long as FPC does not find it excessive.

But regardless of that protection to producers, the court's ruling will result in more "conditional" contracts—sales conditioned upon FPC approval.

That was the basis of the CATC sale to Tennessee Gas. It was a contract conditioned upon FPC issuance of a certificate of public convenience and necessity—the type of approval required from the commission.

But FPC lawyers hint that, in the future, the commission may adopt the position that once a certificate has been issued and gas sales commenced, producers will be required to

supply gas regardless of subsequent court action.

That has been the contention of the FPC staff all along. And such a position may have an important bearing in the CATC case.

One attorney puts it this way: CATC was certificated unconditionally. So the group of producers can decide: (1) to accept the staff position that they can't stop delivery, and then go to FPC for new hearings on the original case; (2) to accept temporary conditions on price; or (3) to stop selling gas, under the contention that CATC now has no authority to sell to Tennessee.

In the first instance, CATC acceptance of the position that it can't stop deliveries would require marking time while FPC took final action on a rehearing. But since CATC has a permanent certificate, it might be able to collect the 22.4¢ price until final disposition by FPC, without having to make a refund to its buyer.

If CATC does not accept the "continuous delivery" position, it could accept a temporary certificate with a price condition. That would save considerable time, gas lawyers say—but CATC turned down such a certificate from FPC previously.

Observers say that, should CATC agree to a temporary certificate, FPC may be in a position to return to its second order in the original case, one granting a temporary rate of 18¢ per Mcf. (including tax), with an escalation to 22.4¢ per Mcf. after the first 24-hour delivery.

Since that would be a rate increase, it could be suspended and subject to a refund if found excessive later.

Finally, in the event the group decides to discontinue gas sales, its leases, most of which are in the U. S.-owned offshore area in the Gulf of Mexico, could be lost for lack of continued development.

FPC also wants to cut out the "favored nation" rate in gas contracts which would be another blow to producers' pocket books.

Outlawing of the clause by Congress, which FPC is seeking, would, in effect, prevent a lot of the price escalation that the Supreme Court feared in ruling on the CATC case.

The favored-nation clause, which is written into most interstate sales contracts, provides that a producer selling gas at a fixed rate is automatically entitled to any higher rate the pipeline company pays another producer in the same area.

The particular case that prompted the drive against favored-nation clauses is one involving Pure Oil Co. and El Paso Natural Gas Co.

Pure contends that El Paso's purchase contract with West Texas Gathering System provided for a higher price than it paid Pure, and that, under its favored-nation clause, it was entitled to an increase in its rate.

Oklahoma Settles Ringwood Case

The long dispute over the price of gas in Oklahoma's Ringwood field was finally settled last week.

The argument was over classification of the field as a gas reservoir and, in effect, the price to be paid for gas in the field. It started last fall, when the Corporation Commission ordered the field shut in.

The commission's concern was whether gas was being wasted, and development of the field held back, by the low price being paid for gas.

The Corporation Commission last week dismissed the remaining two attacks on its field order, giving approval to new contracts offered operators by Oklahoma Natural Gas Co. and Warren Petroleum Corp.

The contracts, which had been accepted by 95% of the operators in April, were held up by the commission pending disposition of two remaining attacks on the order classifying the field as a gas reservoir.

The applications dismissed last week were one filed by the State of Oklahoma and one by a group of operators.

The new contract increases the price of gas to 6¢ per Mcf., retroactive to Apr. 1. And starting next March, operators will receive 40% of the value of the liquids from gas processed at Oklahoma Natural's and Warren's processing plant.

The old contracts, signed in 1952, provided for a payment of 33⅓% of the value of the liquids processed until the plant facilities were paid.

The old terms provided that, after the plant owners had paid for the processing plant, the price would be raised to 6¢ per Mcf. for gas plus 40% of the value of the liquids extracted.

W. A. Jones

B. S. Watson

J. E. Warren

A. P. Frame

C. S. Mitchell

G. H. Hill, Jr.

Cities Service Realigns Top Management, Names Watson Chairman

Burl S. Watson was elected chairman, and J. Ed. Warren was named president of Cities Service Co. last week in a move described as a "major realignment" of top management.

Watson, who has been president since 1953 and with the company since 1917, succeeds W. Alton Jones as chairman and chief executive officer. Jones, who served as president and chief executive officer from 1940 until he became chairman in 1953, was named chairman of the executive committee, a title formerly held by Warren.

The new president joined Cities Service last October after a long career as an independent producer, drilling contractor, government petroleum administrator, and oil banker.

Cities Service also elected three senior vice-presidents, A. P. Frame, Charles S. Mitchell, and George H. Hill, Jr. They had been vice-presidents. Erle G. Christian, formerly secretary, was named a vice-president, as was Edward L. Stauffacher, previously president of Cities Service Oil Co. (Pa.) Frank K. Foster was elected secretary, succeeding Christian.

Suits Could Lead to Import Changes

The administration of the mandatory imports control program may be headed for some changes by the end of the year.

That's the conclusion that can be reached this week as the result of the testimony in two suits seeking allocations before Federal District Judge Joe Ingraham at Houston.

For one thing, testimony in two suits in the Houston district court raised strong legal attacks on the interpretation and administration of the regulations—charges that are bound to reach higher courts.

The first case, brought by Texas American Asphalt Co., which was first believed to be an attack on the validity of the program, was reduced by the company to an attack on the administration of the regulations by Matthew V. Carson, Jr., the imports administrator.

The company's main legal ground is that Carson's refusal of an import allocation to Texas American "deprived" it of its property "without due process of law."

Denial of an allocation to import Venezuelan asphalt crude, company officials testified, deprives the company of its right to use its refinery for the purpose for which it was designed and constructed.

The suit brought by Eastern States Petroleum & Chemical Corp. does not attack the validity of the program either. It seeks an upward adjustment in its allocation, a request already denied by Carson.

Another administrative "problem" brought to light involves import quota "swaps" by inland refiners which carry cash considerations, in violation of the regulations.

Carson has denied repeatedly that inland refiner import trades involve cash, and has said that any such cash "deals" would be violations of the program.

Last week, in the Houston court, Ashley Johnson, superintendent of American Petrofina's Mt. Pleasant (Tex.) refinery, testified that the oil imported under the company's allocation isn't run through his refinery, "but was swapped to other companies for a differential of about 80¢ a bbl." He further testified that the trade involved "just a paper transaction."

It is common knowledge within the industry that import "swaps" were made for quotas for the period ended June 30 at up to $1.10 a bbl. in terms of crude exchanged. Currently, industry sources report, import transactions range from 70¢ to 90¢ a bbl.

One major company this week picked up a quota for the second half from one refiner for "in excess of 90¢ a bbl."

The same refiner previously had "traded" his first period allocation, to another major, for $1.10 a bbl.

Interior Secretary Fred Seaton said this week that the import controls are under "constant surveillance," and that import-exchange agreements are under study.

He told a press conference that he "can't say yes or no" on the possibility of changes in the regulations by the end of the year.

He said that, while he knew of no "imminent" changes, "there's an absolute necessity to keep the program fluid—to maintain as much flexibility as possible. These controls—and their effect—are under constant surveillance."

The crux of the administrative problem on import allocations is the tight limits within which the Interior Dept. has to work in attempting to spread the available import supply among eligible importers.

For crude and unfinished oils, the import regulations specify that allocations be made to refiners on a sliding-scale percentage based on runs for a 12-month period ending three months before the effective date of the allocation.

But out of the total to be imported, Carson has had to allocate supply to cover the "historical" importers. Those companies were permitted to import 80% of their former voluntary plan allocation in the period from Mar. 11 to June 30. Now the percentage has been reduced to 75.7% for importers east of the Rockies, but maintained at 80% for West Coast companies.

And complicating the entire situation is the fact that the very nature of the basic allocations—the percentage-of-runs factor—has tended to keep refiners' runs high, creating an over-all squeeze on individual allocations.

The rising dissatisfaction with individual allocations can be noted in the increase in cases filed with the Oil Import Appeals Board.

Just for the second-half allocations alone, 20 appeals have been filed.

They range from Union Oil Co. of California's request for a higher unfinished oils allocation to one by Texas Butadiene & Chemical Corp. seeking credit for butanes processed in its

Gas Tax Rise Now Looks More Likely

The tax on motor fuels—gasoline and diesel—may yet be increased to finance a high rate of federal highway construction.

The Democratic leaders in Congress this week retreated from their previous "no gas tax increase" position—and now say only that "the increase won't be the 1½ cents" that Eisenhower asked.

All this became public during a session which House Speaker Sam Rayburn had with reporters, after Rayburn had got a fill-in from Ways & Means Committee Chairman Wilbur Mills.

The first indications were that the tax package might shape up like this:

(1) Raise the motor fuel excise tax from the present 3¢ a gal. to 3½¢ or 4¢, effective as soon as it could mechanically be put into effect. The increase would be effective only until July 1, 1960.

(2) Effective July 1, 1960, divert to the trust fund additional highway-user taxes now going to the Treasury's general fund. These include the 6¢-a-gal. tax on lube oil, the 10% manufacturers excise on autos, and the 8% excise on parts and accessories. Another possibility: Divert to the trust fund the entire 10% excise on trucks, buses, and trailers; only half the revenues from these goes to highway financing now.

This is one of the proposals the Democrats have been suggesting as an alternative to the gasoline increase.

Obviously, the Democrats hope to pass a combination bill that gives Eisenhower something he will sign and, at the same time, enables them to claim they are getting what they want.

Bureau of Public Roads data indicate that a 1¢-increase in the gasoline tax would enable the allocation of funds to states to stay on schedule for the coming year—but the additional income would be needed a year from now.

plant as refinery "inputs." It was denied an allocation for the second half by Carson, who ruled the butane inputs could not be credited for a crude and unfinished oils allocation.

Other appellants are simply seeking higher allocations.

But so far, the relief granted by the Appeals Board has been small. And each "exception" granted by the board or by the Oil Imports Administrator has tended to open the doors to other appeals.

As Judge Ingraham questioned it in summing up the Texas American hearing: "If I suspend the regulations for this plaintiff, would we have hundreds or even thousands of new companies to pop up and say I want the same thing?"

Texas American, for example, in its testimony last week challenged Carson's approval of import allocations to Gabriel Oil Co. (1,895 b/d) and to Texas Asphalt & Refining Co. (1,515 b/d) for the second half.

Carson testified that while Gabriel had no refinery, and Texas Asphalt had no refinery-run record for 1958, both companies had importing histories.

Carson also testified, under questioning by a Texas American attorney, that "around 60 to 65" refiners without importing histories have received allocation, and that "a number of" those never anticipated processing the foreign oil allocated.

But he explained that Texas American was turned down for a quota since it had no prior refining history. He added that the company may have a history for the coming period.

Untested Area Brings $3.5-Million

Eight oil companies have just concluded what is believed to be the largest transaction for untested oil and gas lands in Canada.

The deal involves a purchase of exploration rights by a group of companies, made up of Home Oil Co., Ltd., Signal Oil & Gas Co., Kern County Land Co., Alminex Ltd., and United Oils, Ltd., from another group, which includes Canada Southern Petroleum, Ltd., Magellan Petroleum Corp., and Oil Investments, Inc.

Canada Southern holds a 75% interest in the properties, held under permit, with the remaining interest held in equal parts by Magellan and Oil Investments.

The five-company purchaser group is paying $3.5-million for exploration rights to 1,224,050 acres in the Northwest Territories. The acreage is just north of British Columbia.

A total of $1.5-million was paid on closing of the deal this week. The remaining amount will be paid in three equal installments during the next three years.

In addition, the buying group must spend $3-million for drilling and exploration over the next five years.

John W. Buckley, Canada Southern president, says that, in return for this expenditure, the five-company group will receive a 50% interest in the properties.

The agreement also gives the Home-Signal-Kern group a purchase option under which it may acquire a 50% interest in an additional 31,966-acre tract, adjoining British Columbia, which has been retained by the Canada Southern group.

Seismic surveys show the existence of a huge structure in the area, covering an estimated 160,000 acres, about 15 mi. north of the recent, big Petitot River gas strike (PW—May 29'59,p25).

A Canada Southern geologist says there also is evidence that major reefing is present in two or more horizons over a large part of the North Petitot structure.

At least two tests are planned for the area this winter.

R. A. Brown, Home Oil president, says his company will operate two seismic crews also.

He adds that the first test will be drilled on the North Petitot structure as soon as freeze-up permits movement of some heavy equipment into the area.

Whiting Plant Fire Costs $100,000

Racked by a $100,000 explosion and fire last weekend, Indiana Standard's new Ultraformer at Whiting, Ind., is expected to be back in operation in about two months.

Meantime, a standby Ultraformer with comparable capacity will take up the slack and avoid serious dislocation of normal operations, according to Refinery Manager A. F. Enders.

Primarily affected by the blast were the unit's furnaces. There was no apparent damage to the vessel or tower, and surrounding homes and property also escaped injury. Four men sustained minor hurts, however.

Cause of the explosion has not been determined, but a ruptured fuel line is believed responsible.

Enders declined to estimate the amount of low-grade gasoline lost in the fire, but one report placed it at 15,000 to 20,000 gal.

The explosion occurred at 9:20 p.m. on June 26. The last flames were out eight hours later.

The new Ultraformer, with a capacity of 22,000 b/d, was built only last year at a cost of $10-million.

It was one of three built to replace the hydroformer destroyed in the 1955 fire, which caused damages in excess of $10-million. Two years ago, another explosion and fire in an alkylation unit at Whiting cost $1-million.

Shaner Joins Petroleum Week Staff

J. Richard Shaner, former publicity director of the American Petroleum Institute, has joined the news staff of Petroleum Week.

In his capacity with API, Shaner traveled from coast to coast conducting the press activities of all API annual meetings and of many division meetings. In addition, he was loaned by API to handle the press activities of many other oil associations.

His work in that field brought him into contact with oil men in all branches of the industry.

Prior to joining API, Shaner spent many years with the International News Service in Pittsburgh and Harrisburg, and as news editor in the New York headquarters.

Soviets Exhibit 'Cost Cutting' Wares

The Russians made two things clear at this week's exhibit in New York's Coliseum: (1) They are as anxious as U.S. oil men to cut costs; and (2) they are going all-out to impress Americans with their oil achievements.

While not much specific data on oil operations are available, the USSR Exhibition of Achievements in Science, Technology & Culture does have some impressive petroleum exhibits.

The show opened this week in New York amid a rash of ranking government officials—including a surprise visit by President Eisenhower.

The Soviets are showing a model of a new drilling rig that permits the drilling of two wells at the same time, using one crew and one set of equipment. It's called duplex-well drilling.

One of the wells can be drilled vertically and the adjacent one directionally—or both directionally, the Soviets claim.

Nearly 5-million ft. of hole have been drilled with the new rig.

(The Russians had already announced a rig that permits the drilling of three wells simultaneously at the recent Fifth World Petroleum Congress.)

The unit is part of a Russian model of an offshore oil field, similar to the ones the Soviets are now operating in the Caspian Sea. The model is complete with rigs, trestles, trucks, and roadways.

The Russians say this offshore model exemplifies "the progress made in the oil industry as well as the use of automation and telemechanics in the oil fields."

The Soviets' new turbodrill also is on exhibit. So are a sectional turbodrill and a single-screw oil production pump, which is said to reduce "unproductive standstills in a producing well."

A larger model shows how the Russians waterflood a field.

Behind these exhibits, the Russians have placed some huge colored panels trumpeting their announced output goals.

One chart points out the rise in Soviet crude output from 9.2-million metric tons in 1913 (about 184,000 b/d) to a slated total of 230-240-million metric tons by 1964 (4.6-million to 4.8-million b/d)—or double their current production.

"Most of the output," a Soviet spokesman told PETROLEUM WEEK, "will naturally come from our big 'second Baku' area."

Natural gas output, another chart claims, climbed from 200-million cubic meters in 1913 to 29.8-billion in 1958, and will reach 150-billion by 1965.

Still another claims that total volume of chemical output will be trebled in the 1959-to-1965 period. In total volume of chemical output, the Russians claim they are now in second place.

And finally, another chart shows the Russians as the "first in the world to work out a method and start the industrial production of synthetic rubber."

(The chemicals industry was practically nonexistent in prerevolutionary Russia.)

The growing Soviet emphasis on the chemicals industry is illustrated by a huge model of a modern synthetic rubber plant, modeled after a unit now in operation in Soviet Azerbaidjan.

The plant has an annual capacity of some 40,000 tons, and makes butadiene from butane. The unit shows the complete process, from spherical butane storage tanks to the final storage of butadiene in railroad tanks. The model comes equipped with four earphones, as does the offshore model, to explain the function of the units to exhibition visitors.

A good deal of space at the exhibit is devoted to atomic power engineering. And the Russians say that radioactive isotopes are employed extensively in the Soviet Union in gamma-ray inspection of welds in gas pipelines, in oil exploration, and in process control in the chemicals and metals industries.

Coal Organizes for Strong Fight

The coal industry is organizing for a competitive market fight with oil and gas—but hopes to get petroleum backing for a national energy policy.

After watching a steady loss of markets to natural gas and fuel oil, varied coal interests are banding together for the first time to rekindle the dwindling coal flame.

A new organization—the National Coal Policy Conference, Inc.—plans to spend several hundred thousand dollars a year to promote the use of bituminous coal.

In 1940, bituminous coal accounted for 47.2% of total energy consumed in the U.S. Oil had 32.4% of the market, and natural gas only 11.4%.

Now, bituminous coal's market share has slipped to 23.2%. Oil is up to 45.3%; natural gas to 26.5%.

By the method the coal industry figures its position—excluding noncompetitive uses of petroleum such as a motor fuel—bituminous coal dropped from 61% of the "fuel" market in 1940, to 33%. On the same basis, oil rose from 18% in 1940 to 27% now. Gas rose from 9% to 32.4%.

Coal producers, the United Mine Workers, coal-carrying railroads, and allied equipment manufacturers have joined forces to promote the industry.

President of the new policy conference is Joseph E. Moody, who for 13 years has headed the Southern Coal Producers' Assn. Chairman of the executive committee is George H. Love, chairman of Consolidation Coal Co. Directors include railroad presidents and John L. Lewis, president of UMW.

"I see no reason to assume that oil and gas will voluntarily step aside for coal," Moody recently told the policy group's directors.

"They have products to sell and, from all I can hear, they intend to continue to peddle their wares at a profit.

"They intend to beat us tomorrow, and will do so unless we pool our strength and forestall them."

As one step, the coal industry is readying a massive advertising campaign aimed at natural gas users.

Coal leaders reject the theory that coal has no case against natural gas, that coal is simply "complaining against stiff competition."

Moody and other coal leaders frankly admit that the industry's carelessness has been partly responsible for its present plight.

Coal's pitch will be that some home consumers are footing the gas bill for industrial gas users.

Coal leaders will contend that natural gas is being dumped for industrial use at coal's expense—and at the expense of household users.

They believe they can so persuade the average home owner who has a gas furnace.

They cite a recent statement by Federal Power Commissioner Arthur Kline, who said, in dissenting against approval of a Tennessee Gas Trans-

mission Co. plan to serve the Chicago area:

"It is apparent . . . that the sales to the industrial consumers in the Chicago area will be paid for by two other classes of consumers." Kline said Tennessee's present customers, plus small householder and domestic users, would suffer.

Another aim is to keep tight limits on imports of residual fuel oil. Coal interests were active in getting the Administration to include resid in the mandatory imports program. The new organization will try to make sure that residual imports do not increase substantially.

The coal group believes it can compete vigorously with petroleum, yet join in a "fossil-fuels" approach for national-energy-policy legislation. The belief is that a fair study of the nation's energy requirements—determining the proper role for each fuel—would benefit not only coal, but also oil and gas.

The coal interests also believe the time is ripe in Congress for adoption of an energy policy. But the coal men are being cautious and are not yet ready to press for legislation. Meanwhile, they hope to line up oil and gas assistance.

Even the coal leaders feel there is some uncertainty, however, about the congressional coalition with oil and gas. It will be a "delicate" matter, they believe.

But they point to the success in organizing coal management, labor, railroads, and equipment manufacturers in their own organization.

The coal policy conference was not organized without difficulty, however. There were family disputes over organization, and over direction of the new campaign. One result may be a personnel shakeup in the National Coal Assn., which was the coal industry's leading voice until the birth of the policy conference.

Already some natural gas leaders are questioning the coal industry's ambitions—in the light of coal's attempts to control the end use of gas. There is no sign that coal leaders intend to abandon their longtime argument against alleged "wastefulness" of gas—such as "below cost" sales for boiler fuel. Coal interests traditionally have opposed boiler fuel cases before FPC, and have pressed the issue in Congress. One gas company representative said of the coal conference's plans:

"I don't see how any coal group can expect the natural gas industry to ignore coal's record on end use of gas."

What's New / IN THE INDUSTRY

Natural gasoline producers want the federal gasoline tax removed from all natural gasoline sold for petrochemical feedstock. The present Internal Revenue Code exempts only natural gasoline processed into chemicals by natural gasoline producers—not by petrochemical buyers (PW—Jun.19'59, p13). Last week the Natural Gasoline Assn. of America decided to present its case to the Internal Revenue Service to exempt all natural gasoline used for petrochemicals.

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Royal Dutch Shell and British Petroleum are considering building a refinery in Kenya. Discussions have been under way with the governor of Kenya for six months, and a group of technicians will study sites during July.

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Esso Standard Oil Co. has purchased two heating oil resellers on the East Coast—General Automatic Corp., of Baltimore, Md., and Smedley & Mehl of Ardmore, Pa., a Philadelphia suburb.

•

A portable electronic device that can be used to check efficiency of secondary recovery methods in oil fields has been developed by two Bureau of Mines scientists. The electronic monitor can detect and record movement of water that has been "tagged" with radioisotopes.

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A House mining subcommittee has approved a bill to extend maximum lease holdings in Alaska to 1-million acres, matching Alaska's new state maximum. Present maximum permits individuals and corporations to hold 100,000 acres in leases and 200,000 acres in options.

•

Kansas and Oklahoma cut their allowables for July. Kansas decreased its allowable to 312,000 b/d, down 12,000 b/d from June, and the lowest level since June, 1958. Oklahoma's allowable was cut 20,000 b/d to 525,000. Ray C. Jones, Oklahoma's Corporation Commission chairman, says the allowable order represents a cut of 20% per well for allocated pools. Waterfloods and exempt wells will be allowed a 10% overage in July, to be made up by reductions in September.

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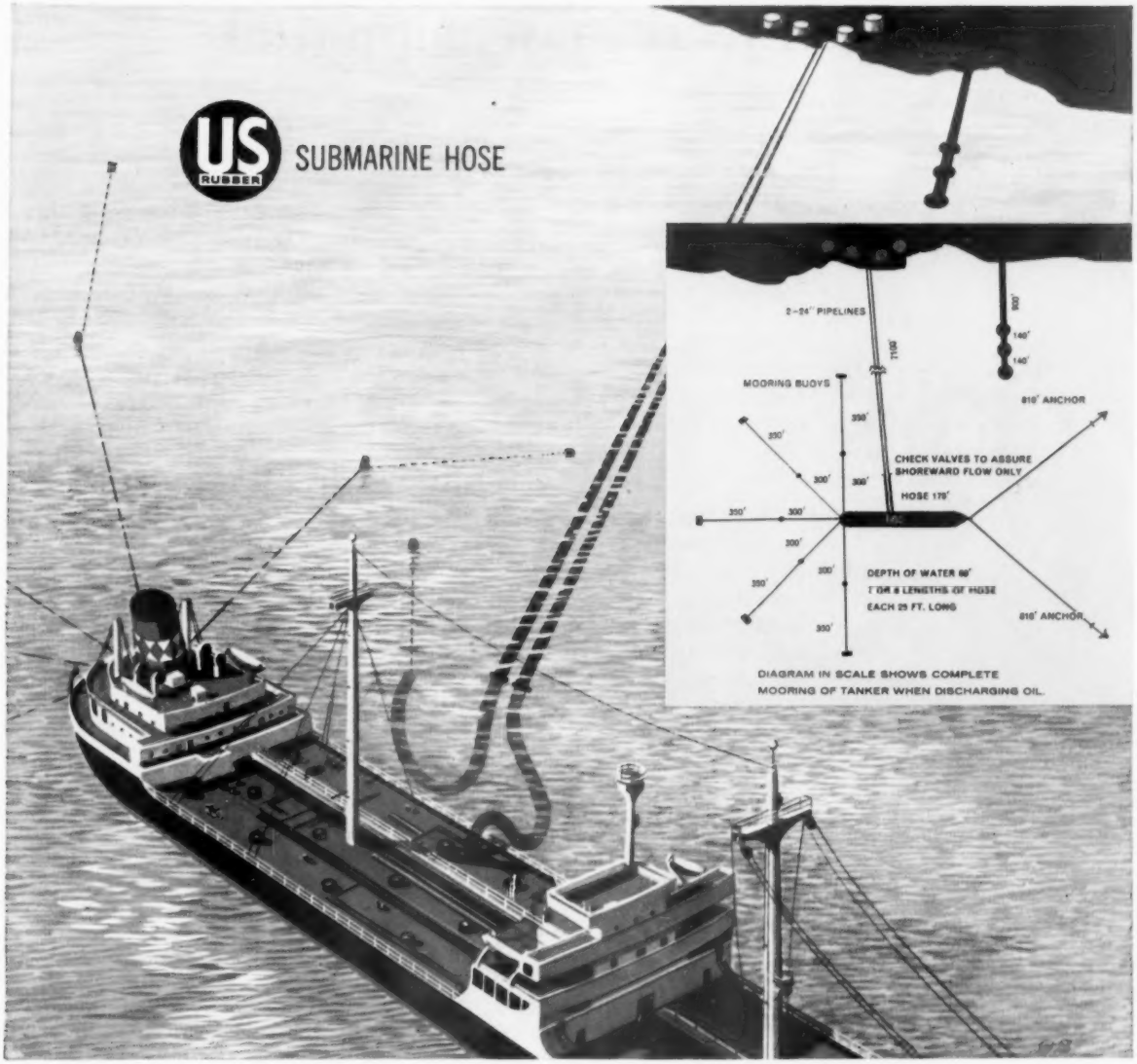
The Interior Dept. plans to invite oil companies to another meeting on nuclear blasts of oil-shale deposits. The industry's "generally favorable" attitude toward the experimental use of nuclear energy prompted the new meeting.

•

The oil industry will start using the American Petroleum Institute's nuclear logging calibration facility this week. The Western Co. will be the first to calibrate its instruments at the $48,000 facility on the University of Houston campus.

•

J. A. Crawford has been appointed executive vice-president of Continental-Emsco Co., a division of Youngstown Sheet & Tube Co. He will continue as president of another division, Youngstown Steel Products Co. W. C. Kinder, vice-president of Continental-Emsco at Dallas, is moving to Los Angeles to supervise the company's expanded operations there.



From tanker to shore...the hook-up is U.S. Amazon Hose

The only submarine unloading point for oil tankers on the East Coast is at the Northville Dock Corp., Long Island, N.Y.

The operators say that submarine unloading would be impossible without hose of this character. Foreign and domestic tankers use this undersea hose (7100 feet offshore) as a hook-up to pipelines discharging heavy and light fuel oil directly into storage tanks on shore. Expensive dock and wharfage facilities are eliminated. *The tankers are moored at sea.*

The U. S. Amazon® Hose H2323 in use here resists the corrosive action of salt water and the turbulent action of swift tides. Its lightness and flexibility enable crew members to make it fast to the deck headers in record time. Also it curves easily from the water to the deck. There is never any sharp bend to impede flow.

Similar installations for other oil companies are located at world-wide points, proving the soundness of the construction features and the over-all quality of U. S. Amazon Hose.

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Looking Ahead in Washington

McGraw-Hill
Washington
Bureau
July 3, 1959

About one-third of the U. S. Senate opposes the present depletion percentage. Political realists in Washington are looking at last week's vote this way: The 21 votes actually cast against depletion are augmented by about a dozen others from senators who were paired (in favor of cutting depletion) or who did not vote but are known to prefer a cut. In the latest show-down, eight absent senators announced that, had they been present, they would have voted in favor of the amendment by Sen. Paul Douglas (D., Ill.) to reduce the depletion level. And at least three or four additional nonvoting Senate members oppose the current depletion rate. On the basis of last week's vote, the division on depletion would be about 65 against a cut and 33 for it if all members were present and voting.

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Thus, the antidepletion bloc needs about 17 switched votes to win in the Senate. If the Douglas forces could proselyte 17 votes from the opposite camp, they would have the 50 necessary to pass the amendment —assuming a full vote. On a similar basis, the antidepletionists would have needed fewer changed votes to have won last year. So, numerically, the industry picked up a few votes—but only a few—in the latest decision, which came on a vote to continue the excise taxes imposed during the Korean War.

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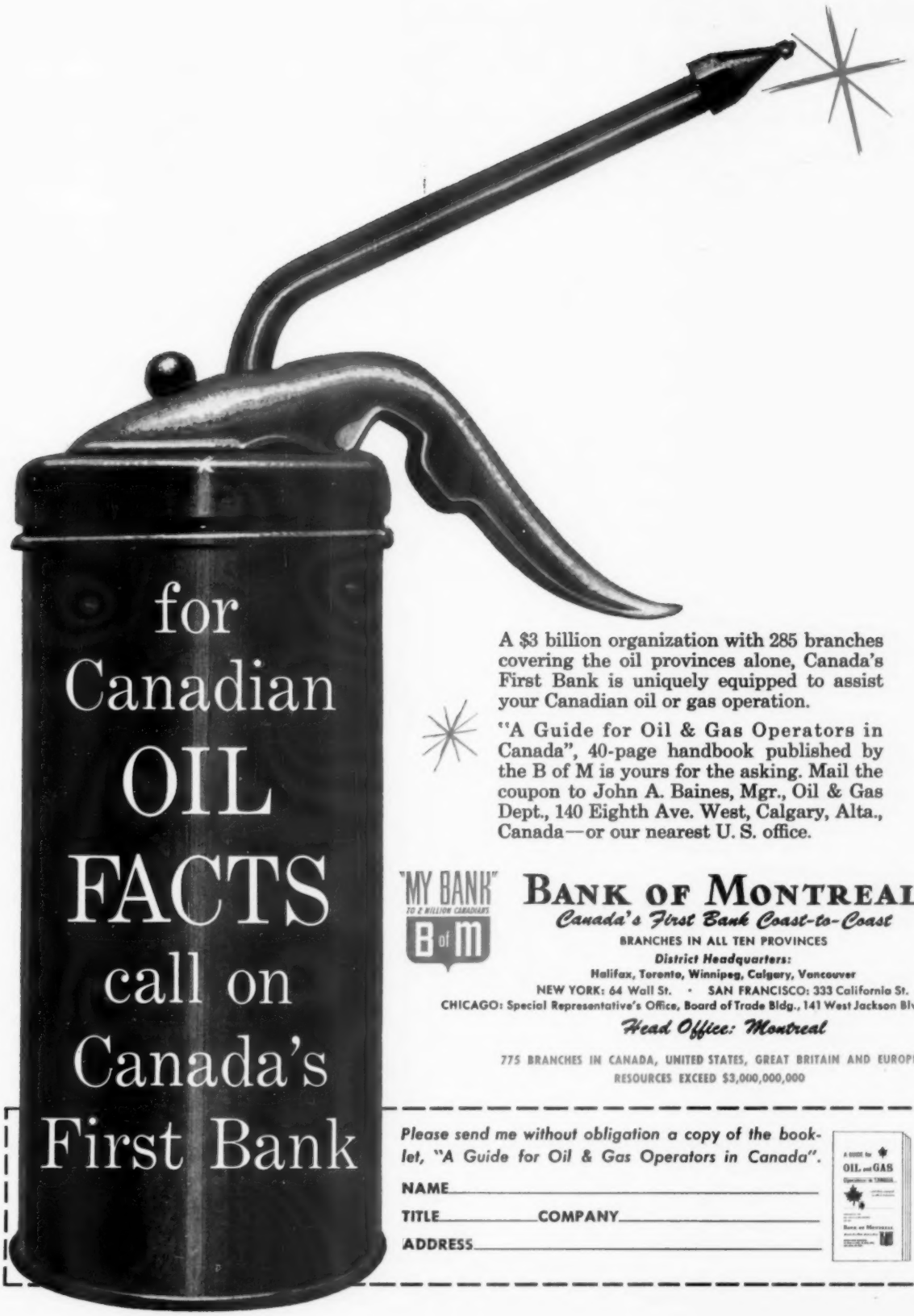
There is no indication that the hard core against depletion is about to give up. There was some dissension among the antidepletionists this year. Several argued with Douglas for postponing the vote until more senators were present, but Douglas did not heed them. The disagreement was not serious, however, and the Douglas-Proxmire wing intends to challenge depletion again next year.

•

The depletion hearings this fall could tilt the scale either way. The Douglas voters look at the upcoming House hearings this way: Chairman Wilbur Mills (D., Ark.) of the House Ways & Means Committee will be under political pressure to come up with a 1960 tax measure which promises some relief to lower-income taxpayers. But the election-year Democratic program in Congress may be based on more spending, which could mean higher—not lower—taxation. Mills' solution seems to be a search for ways to "equalize" the tax structure—which, antidepletionists think, might set a tone against depletion even though the present rate is likely to survive Mills' action. On the other side of the coin, oil and gas spokesmen feel they can point up the need for depletion in open hearings, and thus convince Congress to continue indefinitely the 27½% level.

•

A new mode of transportation may help offshore oil operators. The government is supporting research and development on the so-called ground-cushion phenomenon, which allows vehicles to ride at great speeds on a nearly friction-free column of air. The military is hopeful that "flying" tanks, which can operate over land, water, or marshland, can be developed. On the civilian side, the experts say there's no reason why large-scale cargo carriers can't be made to haul personnel and materials to offshore rigs. One estimate of cost: one cent per ton-mile.



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Arctic Islands: Oil's Newest Frontier

The Canadian government is giving a "hurry up" signal to oil companies wanting to conduct exploratory work on the Arctic Islands, focus of a recent and spectacular land play.

The Arctic Islands lie north of the Canadian mainland and are within the administrative district of Franklin, in the Northwest Territories.

The islands lie north of the Arctic Circle (map), extending to within a few hundred miles of the North Pole. Much of the area is actually north of the North Magnetic Pole, which is located on Prince of Wales Island. The bulk of the acreage applied for is on islands of the Queen Elizabeth group, above the 74th parallel.

Dominion Explorers, Ltd., touched off the land play early this year by applying for 4-million acres on Bathurst, Prince of Wales, and the Sverdrup Islands (PW—Feb.27'59, p22). Within two weeks, a total of 72-million acres were applied for. The total now has topped 86-million acres.

J. D. Bateman, Dominion's president, says the company applied for the acreage in anticipation of forthcoming reports by the Geological Survey of Canada, which has been exploring in the area for 12 years. Bateman calls the current activity "the last cheap land play left in the world." The facts bear him out.

Oil companies holding "exploration licenses" for the area have been assured that they won't lose any money spent now on exploration, even though permits have not yet been issued.

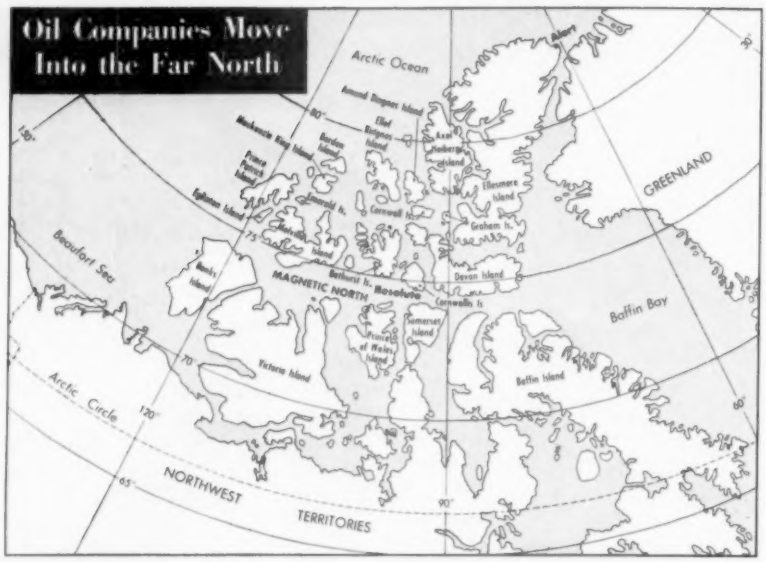
The exploration licenses are a temporary arrangement pending approval of new regulations. The regulations are now before the Canadian Cabinet, which is expected to approve them shortly (PW—Jun.26'59,p16).

Under terms of the regulations, as drawn, applicants must deposit 5¢ per acre per year for three years. If an equivalent amount, or more, is spent on exploration, the deposit is refunded.

After three years, the companies can reapply on any or all of the acreage, with a deposit of 25¢ per acre per year for three more years.

At the end of this period, the companies again get their money back if they have spent that much or more on exploration.

After the second three-year period, the companies will lease on an annual basis for the next six years, at escalating deposit rates of 30¢, 40¢, 50¢, and so on, per acre per year, with this amount also refundable on the same basis.



The deposits will have to be paid as soon as the regulations are approved. All amounts spent up to that time will be credited against the required work once the permits are issued.

If commercial quantities of oil are discovered, the company must go to lease on a selected area. Half of the selected area later reverts to the crown, the remainder being held by the company.

"You can get up to 70% of the reserves in a normal oil field under this arrangement," says Bateman, "since the reversion is not on a simple checkerboard pattern. Instead, it is much like the system in provinces, where companies can take any 18 of the 36 sections in each township."

The government has set up an "applications priority" system for issuance of permits to the 27 applicants.

Applicants who can pass a careful scrutiny as to financial standing and who submit detailed development plans will receive permits. Those who have already filed will have priority.

If the more than 86-million acres presently held under the temporary licenses are retained, it will mean a minimum exploration expenditure of more than $24-million over the next six years.

Assuming no changes in the proposed exploration regulations, a total of $90-million will be spent over the next 13 years.

At least two companies already are moving ahead with exploration in the silent, frozen region.

Round Valley Oil Co., Ltd., a subsidiary of British-controlled Lobitos Oilfields, Ltd., which has applied for about 2¾-million acres on Cornwallis, Bathurst, and Melville Islands, has moved in some supplies for initial geological work. A geological party has reached the area to conduct exploratory activity for three months.

And Dominion Explorers has flown in two Piper Super Cubs to be used in exploratory work. Flying conditions are generally good, except for some fog in the summer months.

The planes, which have a landing speed of only 35 mph., are equipped with oversized, inflated tires to permit landing in very small areas. They will operate out of Resolute, a Royal Canadian Air Force base on Cornwallis Island.

Geologists will work and live with the pilots, flying from area to area, and setting down wherever the surface looks interesting.

The geologists will use a photomosaic, made up from pictures processed by the RCAF (picture, page 23), to help guide them in their surface exploration.

Bateman told PETROLEUM WEEK that no seismic or other geophysical work is planned this summer. He

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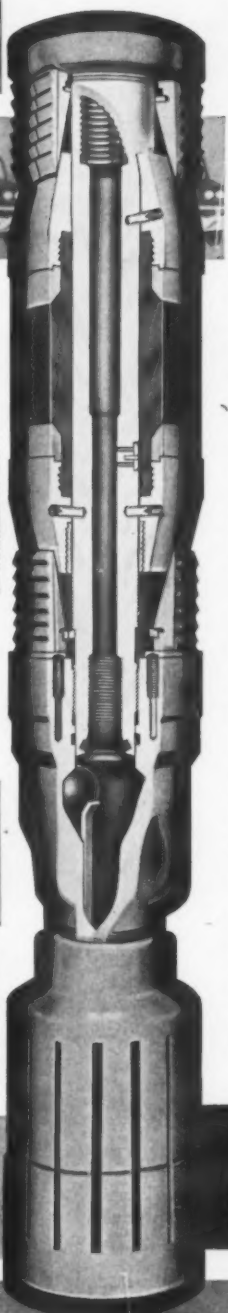

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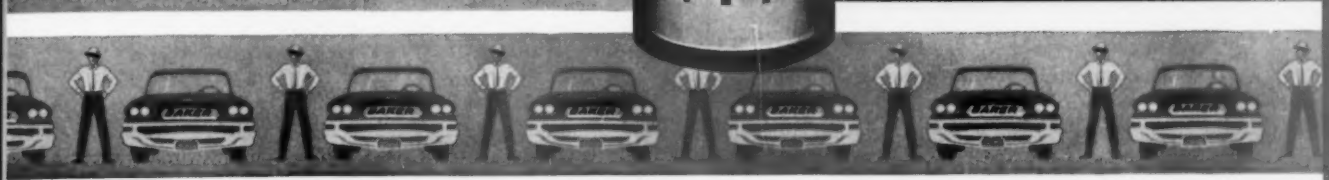

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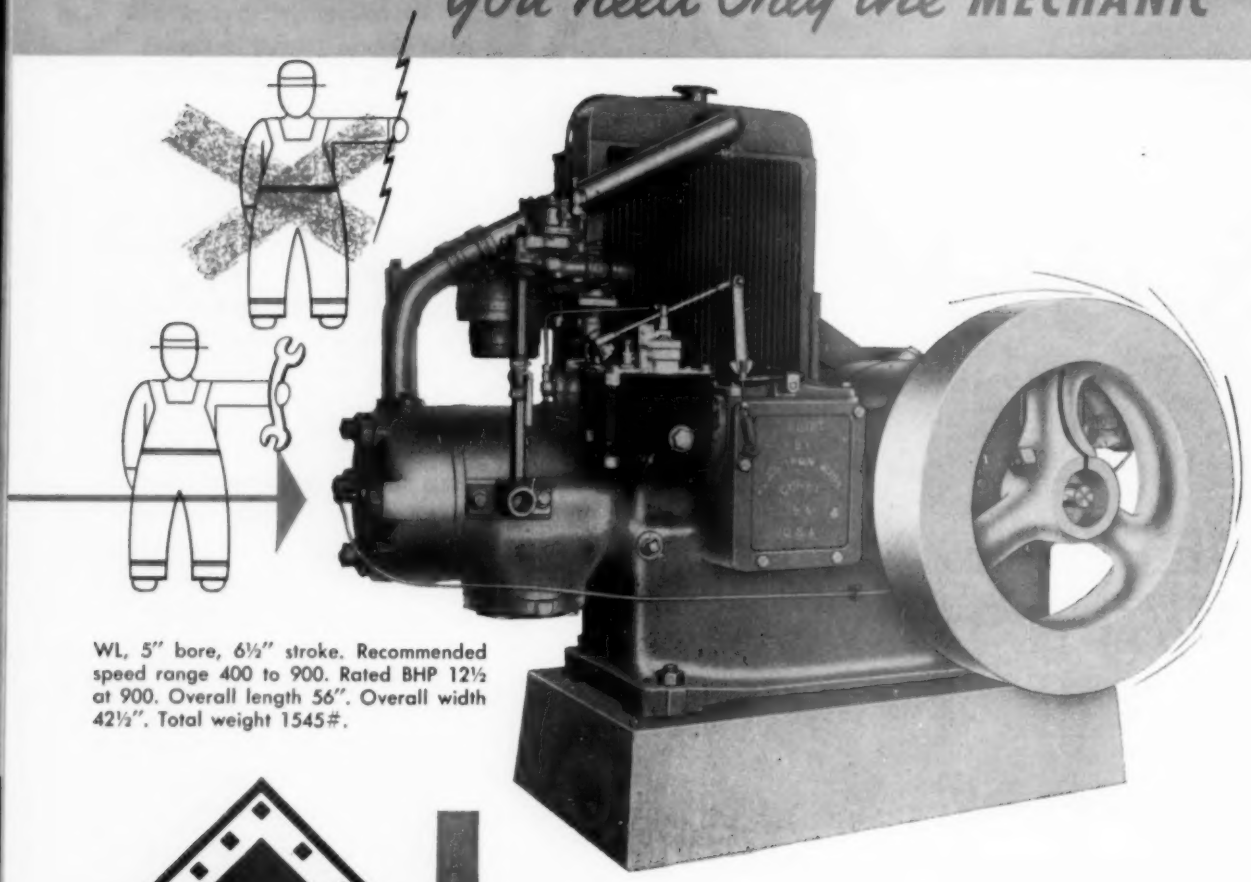

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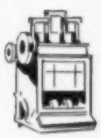

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added that the emphasis will be on working out structures and facies changes, and determining reef trends.

The two companies may soon be joined by others.

J. C. Sproule & Associates, Calgary geological exploration and engineering consulting firm, is holding four parties and two aircraft in readiness for two major companies.

Other than "major," the clients are not further identified. But it's understood the parties and aircraft will be on their way as soon as permits are issued.

Among companies holding applications for huge acreage are Cree Oil of Canada, Ltd., which has applied for 7-million acres on Melville Island, and all of Prince Patrick Island; Charter Oil Co., Ltd., which has applied for 1¼-million acres in scattered parts of the islands; Texaco Exploration Co., applicant for 3-million acres on Banks, Melville, Cornwall, Graham, and Buckingham Islands; Trans-Western Oils, Ltd., and associates, applicant for a whopping 12-million acres on all of Emerald, Borden, Mackenzie King, and Eglinton Islands, the west side of Melville Island, and parts of Bathurst, Banks, Ellef Ringnes, Axel Heiberg, and Ellesmere Islands; and Dome Petroleum Co., applicant for 1,392,247 acres on Melville, Ellef Ringnes, and Amund Ringnes Islands.

A Texaco spokesman told PETROLEUM WEEK that the company was "initiating nothing until we have the land." He said the company was still seeking information regarding the islands, and that this information was being sought from the government "or anywhere we can dig it up. We don't know what the heck's up there, and we can't find answers to problems until we know just what the problems are."

A Dome Petroleum official gave a similar view: "We are in just about the same position as others—waiting. Waiting for official word from the government as to who has what on those islands."

The government, too, is stepping up exploration and research in the islands.

Y. O. Fortier, of the Geological Survey of Canada, says, "The entire Archipelago has been photographed from the air, and modern, accurate maps are being prepared. In many areas, these new maps are the first to appear since the British Admiralty Charts were prepared, some as long ago as the middle of the last century.

"Airborne systematic geodetic, geophysical, and geological surveys have been conducted over large parts of the Arctic Islands. During every year since 1947, several geological parties have mapped some parts of the Archipelago."

ABOUT 50 SQ. MI. are shown in this aerial photo of a Canadian Arctic island. Such photos are put together in mosiacs for use in exploration of the area.

A team of 15 scientists also has established itself at Isachsen, on Ellef Ringnes Island, to carry out reconnaissance. Starting next year, scientists will be sent in 40-man teams, studying a different segment of the Arctic Continental Shelf each year.

Canadian Arctic experts say that the Russians, who have long been active in the Arctic area, have better charts and more information about the Canadian Shelf than the Canadian government itself.

A permanent geophysical research station is being established at Alert, on the north tip of Ellesmere Island, the most northerly inhabited point in the world. A meterological station already is operating there.

The movement of personnel and supplies is the biggest problem in the big white solitude of the Arctic Islands. But the area is not as forbidding as might be expected.

To a certain extent, the Arctic Islands may be more accessible than the Northwest Territories and the Yukon Territory, once summer shipping problems are solved. (Moving ice remains a threat.)

It appears that Resolute may become the focal point of operations in the eastern portion of the islands. For the western side, supplies likely will go up the Mackenzie River to Aklavik, from which supplies will be flown or shipped into the area during the summer months.

The operational season will be short—about three to four months in late spring and early summer. This is just the reverse of other areas in northern Canada, where freeze-up is the best time for activity.

Scant—if any—daylight during the winter months is a major limitation on winter work in the islands.

Operators familiar with offshore drilling say that the stable, thick ice shelf in the broad reaches of the enclosed seas, free from fast currents, could serve as a "raft" for drillsites.

And, incidentally, oil men are likely to run into mammals "in quantity," including polar bears, seals, foxes, caribou, wolves, hares, weasels, whales, and the strange little lemmings, which every now and then hurl themselves into the seas in mass suicide.

Also unlike other Canadian areas, the islands present no spring runoff problems. And there is little or no muskeg.

The ground is permanently frozen, except for a few inches during summer, according to a GSC official.

This estimate of a "few inches," however, may be conservative as applied to certain island regions. One industry source in Calgary estimates that the permafrost could be from one to two feet from the surface at some locations, with the result that travel by truck might not be suitable.

Bateman says the permafrost is believed to be more than 1,200 ft. thick in most areas, and that about 8 in. will thaw in summer. This will not prevent landings by light aircraft, though such planes will more likely seek landing strips on beaches, river beds, or ridge tops.

No serious problems are expected from the standpoint of geological work, says a Round Valley official.

"The terrain will not be particularly

fierce," he says, adding that widespread rock outcrops will facilitate geological work.

He says the company's greatest concern is that "we will be a long way from the rest of humanity," and that could be important in the event of any emergency requiring quick action from the outside. Round Valley also will use two Piper Super Cubs to carry out geological studies.

The climate of the Queen Elizabeth Islands is much less severe than is generally believed. And, strangely enough, much of the area has as little precipitation as in many desert areas.

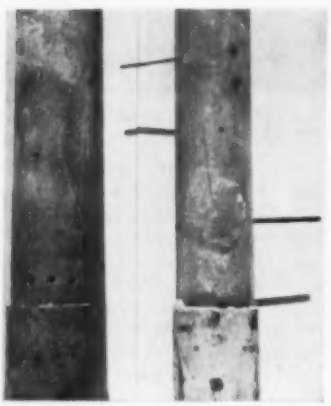
Summers are cool, but remarkably uniform. July daily maximum temperatures average about 45F, with the minimum about 35F.

The climate is amenable enough, in fact, to support considerable plant life, including several varieties of edible berries, and many bright flowers.

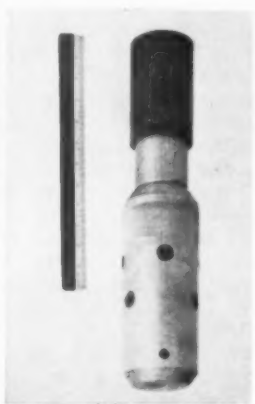
As for the winter, a Charter spokesman says, "It's not as cold as, say, Ft. Smith or Yellowknife." He adds that when it gets 20F below zero in the islands, it could be 60F below in the territories. Winds are moderate.

Precipitation averages about 5 in. per year, from less than 1 in. to about 8 in. The lack of precipitation minimizes snow coverage, permitting land edges to be seen and increasing the safety factor. The area is so dry that dust storms are not unknown, even in winter.

(Editor's note: Another story on this area will deal with geology, potential markets, transportation, and other factors.)



HOLE PATTERNS (left) were made by corresponding tools (right) in Western Co. test of perforating by using jetted abrasives.



FOUR WATER JETS illustrate abrasive jetting action of Dowell's tool. Seven-jet, single-stage gun is at right.

Sand-Slurry Perforating Is Perfected

The newly-perfected abrasive jetting technique—sand slurries jetted at high pressures to perforate casing, clean pay faces, and enlarge well bores—may have a big impact on well completion practices.

Just recently (PW—Jun.26'59,p33), Dowell Division of Dow Chemical and Western Co. almost simultaneously announced perfection of the method. It is called Abrasijet by Dowell and Hydra-Perf by Western.

The perforation is accomplished without the use of explosives.

Better pumps and better metals are the two big factors that have taken abrasive jetting out of the realm of theory and revived it as a useful oilfield technique.

When first introduced experimentally around 1939—primarily for use in cleaning well bores, in restoring damaged permeabilities, and in enlarging open hole cavities—the method was hindered in two ways.

- Mobile pumps of that time were unable to develop the required hydraulic horsepower; and
- Metals available for the jets were eaten away almost as fast as the formation being treated.

Research efforts aimed at combatting these deficiencies were suspended when World War II broke out.

And, after the war, open hole completions became less frequent, and explosive jet perforating was developed on the same principle as the wartime bazooka.

Further discouragement to development of the then-ten-year-old sand-slurry method was brought on in 1949 when sand fracturing became a commercial reality.

But now, modern technology has supplied the tools necessary to perfect the technique.

Basically, abrasive jetting consists of directing high-velocity streams of sand-laden fluid against the casing or formation by means of a jet gun run on tubing.

The Dowell guns are approximately 12 in. long with outside diameter of 3 to 4 in. They are designed so that combinations of one to seven nozzles may be used simultaneously in the single-stage tool.

The nozzles themselves, made of hardened steel alloy with 3/16-in. outlets, are positioned with four openings on the upper plane and three on the lower.

The orifices on the Western Co. tool likewise are made of hardened steel alloy, and have an outlet .175-in. in diameter.

Western has two designs available: one with a conventional perforating pattern of two or four holes per foot in a spiral or radial design; and the other utilizing the Fracture Initiation process, making six perforations on a single plane.

The present tool fits on 2-in. tubing. But tools have been designed to allow perforations to be made in pipe as small as 2½ in.

The Western tool can be used for up to eight simultaneous perforations at one depth.

The method employed by the two companies announcing the method is much the same. The main differ-

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ence is in the way the gun is used.

Dowell guns may be run in a series, each representing a separate stage of the over-all tool. Three 7-jet guns are the most used to date.

When the guns are run in series, a ball dropped down the tubing after the lower jets have been expended seals the bottom gun from the one immediately above it.

The dropping ball also causes a sleeve to fall, opening the jets in the second gun.

Such an arrangement, says Dowell, allows longer in-hole periods, and greater latitude of perforating technique.

Western's tool can be used to perforate a wide "entire zone or several zones" by raising or lowering it into place opposite the new target area.

Conventional fracturing units are used at the surface to provide the hydraulic power for the jetting.

Western has used a 600-hp. Fracmaster pump truck.

Dowell has used both its twin-diesel 300-hp. pump units and its Allison aircraft-type 600-hp. units. With the latter, Dowell reports it is able to develop a maximum of 75 hp. across the jets.

Differential pressures (surface pressure plus the additional amount required to offset friction loss down tubing) of 1,800 to 3,000 lb. are commonly used.

Jet life, the most critical factor involved in abrasive jetting, is directly affected by sand concentration and pressure differential.

Assuming a sand concentration of 2 lb. per gal. and a pressure of 2,500 psi., the life of each jet will be about ten minutes, says Dowell. By cutting the sand concentration in half, or by reducing the pressure proportionately, jet life is almost doubled.

At 2,500 lb. differential, Dowell says, each 3/16-in. jet will accept about 52 gal. of fluid per minute. And at the same differential, up to 600 lb. of sand can be jetted each minute—depending on the number of outlets.

Three jet nozzles open simultaneously is considered standard procedure for most Dowell jetting operations. An increase in the number of jets necessitates an increase in the injection rate to maintain the same pressure.

Thus the fewer the jets open at any one time, the lower the pumping requirements will be.

Western hasn't released any figures on the life of its jets. It does say, however, that in one of its tests, after three separate perforation jobs, the orifice size had increased from .175-in. to .183-in.

JUST 23 SECONDS were required to perforate 7-in. casing and 6 in. of cement.

Both companies visualize abrasive jetting as an almost unbeatable combination tool because it is capable of performing several downhole completion tasks in one run.

After perforations have been made, acidizing operations can be carried out through the jets, or the acid can replace the water or oil as original jetting fluid.

As a follow-up, formation fracturing can be accomplished by introducing sand and fluid down the annular space, or down casing and tubing simultaneously. No packer is required.

What's more, perforation is accomplished without the cement shattering.

And since it is normal procedure in abrasive jetting to facilitate reverse circulation by incorporating a standard ball-and-seat valve in the bottom of the tool, it would be possible to place the well on production without round-tripping the tubing, says Dowell.

Western, too, says its tool may be kept in the well for production.

Theoretically at least, the well could go on production without a wireline ever being run after casing is set.

Although comprehensive field tests still must provide more answers, engineers set jet life as the only practical limitation to penetration depth.

Initial Dowell laboratory experiments indicate penetration of the formation up to three or more times than normally observed with explosive jet or bullet perforating.

In addition, much larger-diameter channels—1½-in. and more—are created in the reservoir rock.

Greatest jetting efficiency, Dowell says, has been noted at a standoff distance of about 7 in.

Since standoff distance within standard-size production pipe is necessarily limited to about 2 in., it is apparent that full penetrating power is not achieved until the channel has penetrated casing and formation at least 5 in., says Dowell.

Western says the orifices on its tool are within 1 in. of the casing during jetting.

In a Western demonstration recently held at Midland, J-55, 17-lb. casing was set in neat cement inside a steel drum, which was buried in the ground.

"Only 3 to 5 minutes were required to perforate the casing, the cement, the drum, and some 20 ft. or more of soil surrounding the target," says Western.

The jet stream cut a ½-in. hole through the casing, a 2-in. hole through the steel drum, and about an 8-in. hole at the point where it entered the earth. The casing itself was perforated in about 30 to 40 seconds, says Western.

Field trials of abrasive jetting by both companies have met with good results.

One recent Dowell perforating job, completed near Mount Carmel, in southeastern Illinois, illustrates the work being done:

The operator had set pipe through a thin pay section and had perforated with standard equipment. Water intrusion from an underlying stream was noted and cement was squeezed behind the casing for shut-off.

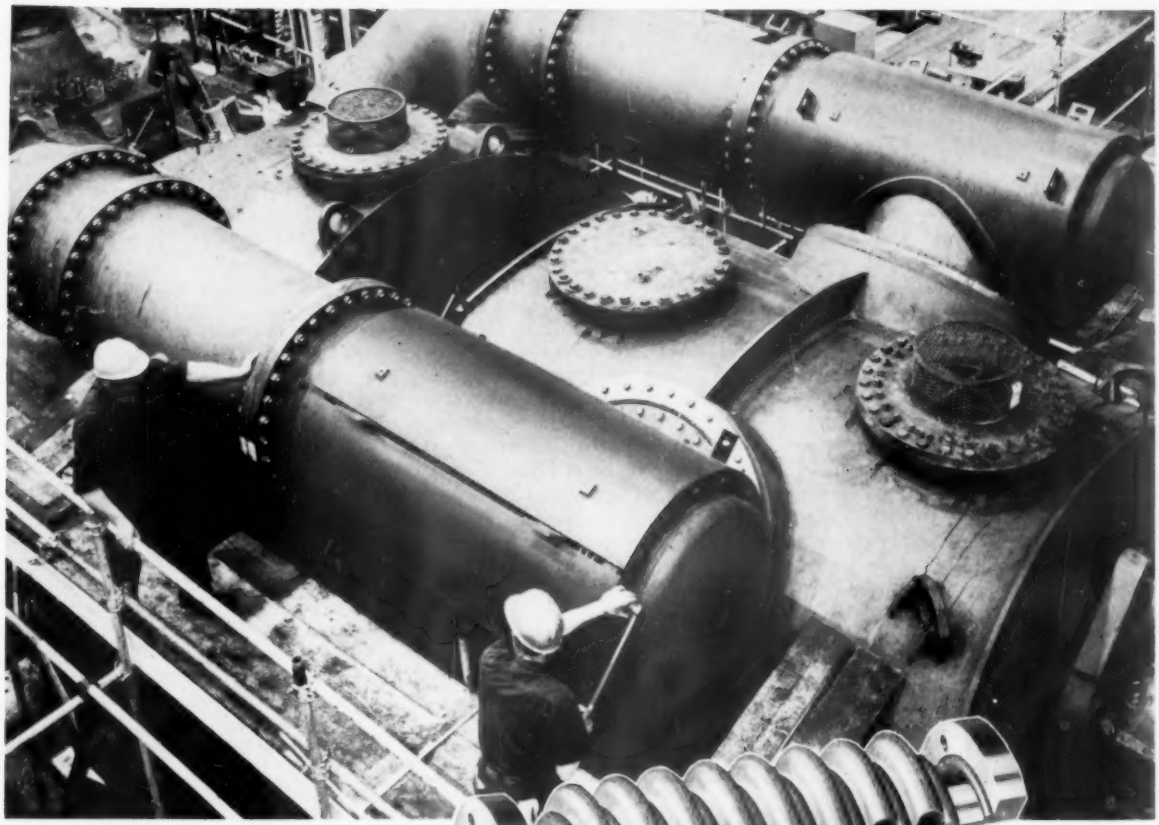
To prevent cement shattering from a conventional shaped charge, and possible communication between zones, the operator called on Dowell to jet with sand slurry. Engineers selected a two-stage tool for the job and ran it with three jets open in each gun.

A total of 4,500 lb. of sand and 143 bbl. of water, (a 1½:1 ratio) was jetted at 2,200 lb. differential pressure. Total jetting time was less than a minute.

The job was considered successful in that production was secured without excessive water yield, thus indicating penetration without shattering.

In a Western Co. well test, 14 bbl. of lease crude with 2 lb. of 20-40 frac sand per gal. was pumped down 4,379 ft. of 2 in. tubing.

The fluid and sand was pumped through the tool for 3 minutes and oil began flowing through the perforations.



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What's New / IN EXPLORATION, DRILLING, PRODUCTION

More than $1-billion has been spent in offshore drilling since its beginning in 1928, according to Roger Cowie, Shell Oil Co. geologist.

Production has yielded $800-million, says Cowie, of which almost half has gone for operating costs.

Cowie, speaking before the Louisiana Workshop on Economic Education in New Orleans last week, said that if exploration operations were halted now and proved reserves were used up, companies could make money on their investments in five years.

He said about 2% of known gas reserves and about 10% of known oil reserves offshore Louisiana have been produced so far.

He added that the major offshore success is that only 800 dry holes have been found in more than 2,800 drilling tests to date.

The biggest land play of recent years in the Pacific Northwest is spreading through southern Oregon and northern California.

Up to this week, more than 300,000 acres of private and federal land had been spoken for. Filings for federal land have been particularly heavy in Lake County, Ore., where some 260,000 acres have been taken.

The play centers in Goose Lake, which straddles the California-Oregon border, and Summer Lake, which embraces in part what is known as the Modoc lava plateaus.

Geologists theorize that interesting sedimentary beds lie below the lava beds, which are tourist attractions in the area.

Previous exploration in this area has been meager.

A major company, reliably identified as Humble Oil & Refining Co., is back of the new interest in the area. Humble has had field parties in the locale recently.

•

A stop-order on gas flaring is hanging over New Mexico operators.

The state Oil Conservation Commission has denied a request by operators for a six-month postponement of a no-flaring order.

But the commission has yet to decide just when its order will be made effective. Most of the gas is being flared in the Gallegos-Gallup and Bisti-Lower Gallup oil fields.

Operators seek the delay of the no-flare order because they haven't received FPC permission to sell the gas. If the order is made effective before FPC acts on the gas sale requests, either the gas will have to be reinjected or the oil wells producing the gas will have to be shut-in.

•

Richfield Oil Corp. is preparing to ship another rig north to join the expanding oil search in Alaska.

The company has awarded a contract to Clyde Hall Drilling Co. to drill a wildcat near the town of Yakataga, in the Cape Yakataga area.

Moving-in operations are scheduled to begin in July.

Alaskan oil projects now active include Standard Oil Co. of California No. 4A Swanson River Unit, 1½ mi. southwest of the Swanson River Unit discovery, standing cemented with 7-in. casing at 11,449 ft.; Union Oil Co. of California and Ohio Oil Co. No. 1 Kanai Unit, Kenai Peninsula, drilling below 7,200 ft.; Alaska Consolidated Oil Co. No. 1 Antonio Zappa, Iniskin Bay, drilling below 7,100 ft.; and General Petroleum Corp. No. 1 Great Basins Petroleum Co. Becharof, Bristol Bay, rigging up.

•

International Oil Corp., Dallas, has acquired the assets of King-Loc Petroleum Co., Phoenix, Ariz. Price was not disclosed.

International gains 25 gas wells in Rio Arriba County, northwest New Mexico, plus approximately 14,000 acres of nonproducing leases in the Rocky Mountain region.

The Rio Arriba production is ad-

Begin Relief Hole to Kill Wild Well

A relief well is being drilled in an attempt to kill a wildcat that has been blowing out of control for about a month on Grizzly Island, 25 mi. northeast of Oakland, Calif.

Gene Reid Drilling, Inc., moved in a rig last week and spudded in the relief hole about 150 ft. from the blowout.

As far as is known, this marks the first time such an operation has been attempted in California as a means of killing a blowout.

An estimated 2-million to 3-million cf/d of gas is escaping from the test—G. E. Kadane & Sons No. 10 Standard-Suisun Community, section 31-4n-1w, Solano County.

The hole was at 1,020 ft. when the blowout occurred, forming a crater that toppled the mast and engulfed the substructure, rotary table, and blowout prevention equipment of Brown Drilling Co.'s half-million-dollar "Mighty Mole" rig.

Damage to the rig is estimated to be in excess of $200,000.

Every precaution is being taken to keep down the chances of fire.

Changes in wind, which might carry gas to the relief well, or fog, which would hold the gas close to the ground, will be reasons for an immediate shut-down, and possible evacuation from the relief-well site.

Gas sniffers—safety devices that sample the air for traces of gas—will be positioned between the relief well and the crater to signal a warning when conditions become unsafe.

A Baroid mud wagon with a gas indicator to check drilling mud constantly for gas also will be used.

The drilling program calls for straight hole to 100 ft. and a directional hole to 900 ft., where the wild well will be intercepted.

A 20-in. conductor pipe will be cemented for the first 50 ft. When the depth reaches 500 ft., 13⅜-in. casing will be cemented, and blowout prevention equipment will be installed.

The operator plans to kill the well with heavy mud and quick-wet cement.

Once the wild well is killed, the deviated portion of the relief well will be plugged back, and drilling will continue in the straight hole to about 6,500 ft.—target depth for the original wildcat.

jacent to productive leases already held by International.

•

Saskatchewan's Oil & Gas Conservation Board has drawn up a model unitization plan.

The board suggests that the model plan be used as a guide in future applications for unit operation, and that any proposed modifications of the plan be clearly indicated at the time of application.

The model plan incorporates the recommendations of the oil industry with the provisions laid down by the Oil & Gas Conservation Act.

•

Drilling Highlights

Kansas—Shamrock Oil & Gas Corp. No. 1 Boyer, section 5-33s-28w, Meade County, flowed 101-million cf/d of gas on 4-hour open-flow test, after fracturing, through perforations at 5,544-46 ft., 5,555-56 ft., and 5,570-600 ft. in the Morrow. Distillate recovery was 13 bbl. The wildcat is 3½ mi. northeast of Northeast Mohler pool.

South Louisiana—Magnolia Petroleum Co. No. 1 Miami Corp., section 8-14s-7w, Cameron Parish, was completed for 284 b/d of oil and 6.5-million cf/d of gas through 12/64-in. choke and perforations at 10,420-23 ft. The well is 3 mi. northwest of Chenier Perdue field.

East Texas—Lodi Drilling & Service Co. and John C. Robbins Jr. No. 1 Beasley-Brown, T. A. Pannell survey, Harrison County, was completed for 124 b/d of 41.9-gravity oil through 13/64-in. choke and perforations at 6,432-39 ft. in the Page section of the Pettit (Lower Cretaceous). The opener is 1 mi. north of Glenrose production in Bethany field.

North Dakota—J. R. Padon and Mar-Win Development No. 1 Ruppert, section 34-164n-92w, Burke County, was completed for 319 b/d through ¼-in. choke and perforations at 5,859-71 ft. in the Nesson. The discovery is 3 mi. west of Portal field.

West Texas—Humble Oil & Refining Co. No. 1 J. B. Pentecost, labor 19, league 19, Wichita County school land survey, Hockley County, was completed as a Wolfcamp (Permian) discovery for 197 b/d of 30.9-gravity oil on the pump through perforations at 8,602-36 ft. The discovery is 4 mi. north of West Ropes field.

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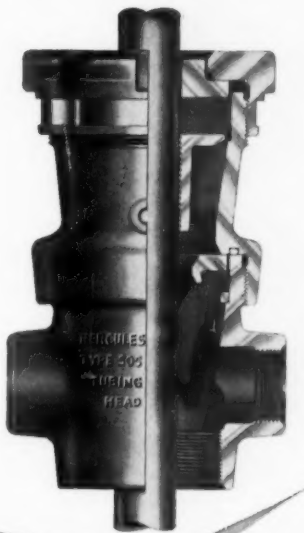
HERCULES TYPE SOS

TUBING HEAD

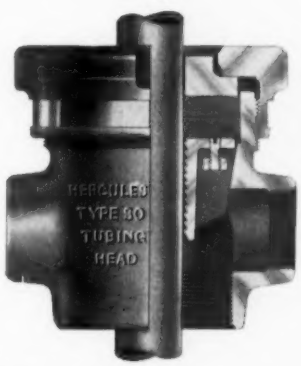
Hercules "Type SOS" is a 4000 pound test stripper tubing head. The lower section contains the neoprene tubing stripper; the upper section or bowl contains the slips and packing arrangement. The SOS is unsurpassed for use in well servicing operations in addition to its use in flowing wells.



HERCULES TYPE SO

TUBING HEAD

Hercules "Type SO" tubing head is actually the lower section of the "Type SOS" tubing head, containing the slips and packing arrangement. It is particularly suitable for pumping due to its compactness, being approximately 12 inches high.



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An old technique comes home as U. S. refiners make . . .

Ethylene, Acetylene from Liquid Feed

The manufacture of acetylene and ethylene from light liquid hydrocarbons, long used in Europe, is just coming into favor in this country.

These two products are extremely important starting materials for the petrochemical industry. Ethylene, for example, was produced last year at a rate of 5-billion lb. and it is predicted that by 1975 its consumption will reach 9.5-billion lb. Demand for acetylene, though comparatively smaller, is also high.

An almost endless list of products are made from these two materials, by oxidation, hydrogenation, chlorination, or any of the many routes known to the petrochemical industry.

The process was first used in Europe because, over there, the supply of gaseous hydrocarbons available for petrochemical manufacture was inadequate.

The gas most frequently used in Europe as a starting material for the manufacture of petrochemical products was coke oven gas. Production of olefins or acetylene from that source is limited. So, European producers turned to pyrolytic processes capable of using liquid feedstocks, available from their refineries.

Imperial Chemical Industries, Ltd. of England, was the first to build a full-size plant for the production of ethylene by cracking of light naphthas. It was built by M. W. Kellogg Co. in 1951. It used as feedstock Middle East naphtha mixtures, which it received by tanker from Shell-Mex & B.P., Ltd.

Since that time, Kellogg has built seven more such plants—three in England, two in Italy, and one each in France and Germany.

Stone & Webster Engineering Co., Boston, another specialist in the field, has built half a dozen plants in Europe, and is now constructing another one, in Scotland.

Foster Wheeler Corp. has built three plants to produce ethylene from naphthas—one for Esso Petroleum Co., Ltd., at Fawley, England; one for Esso Standard S.F.A., in France; and a small one for A. P. Moller Co., in Denmark.

The Lummus Co. has also built several such plants in Europe.

The new acetylene process was also pioneered in Europe.

One method was worked out by Kellogg in cooperation with the Société Belge de l'Azote. Its first commercial plant goes on stream this year in Carling, France.

Farbwerke Hoechst A. G., with the Lummus Co., has developed a similar high-temperature process for acetylene production. Its first commercial plant is being erected at present at Frankfurt, for a yearly capacity of 100-million lb. of acetylene, plus some ethylene, starting with a light naphtha feedstock.

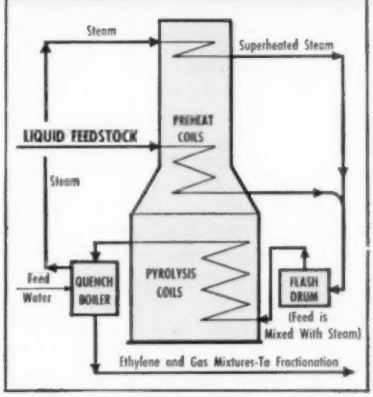
Interestingly enough, the process was first developed in the U.S., but there was no economic incentive to use it at that time.

The Institute of Gas Technology, in Chicago, had conducted research on high-temperature thermal cracking (pyrolysis) of hydrocarbons since 1947. So had many engineering firms.

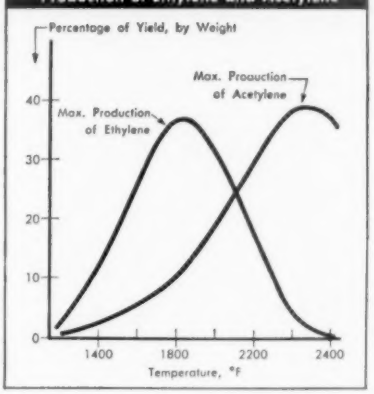
But natural or refinery gas was plentiful and cheap. On the other hand, light and heavy naphthas of low octane rating, produced in refineries, were being upgraded to make higher-octane blending materials, quite satisfactory for the gasoline required at that time. So none were available economically for petrochemical use.

However, the experience gained by American engineering companies in low- as well as high-temperature cracking here, was put to good use by the

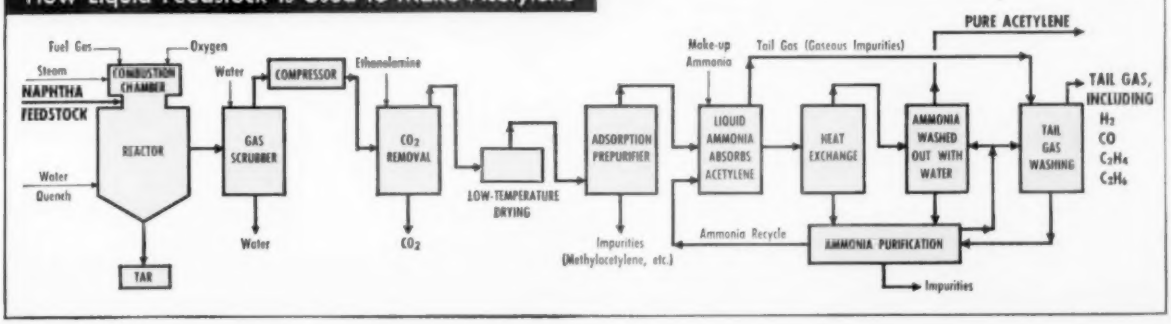
How Ethylene Reactor Works



How Temperature Affects Relative Production of Ethylene and Acetylene



How Liquid Feedstock Is Used to Make Acetylene



European manufacturers for the development of their processes.

Today, with the value of natural gasoline and light naphthas on the decline in the U.S., and the price of natural gas increasing, American manufacturers are looking with increasing favor on these methods, and have started using them in this country.

Natural gasoline has become a drug on the market, yet it must be removed from natural and casinghead gas before the gas can be sold to industrial and domestic users. The very high octane requirements of motor gasoline today have also made it increasingly expensive to upgrade the low-octane naphthas. These liquids are, therefore, becoming more readily available as petrochemical feedstocks.

Magnolia Petroleum Co. is building a plant at Beaumont, Tex., to produce 380,000 tons per year of ethylene, using naphthas of about 200F distillation end point, from which the valuable isopentane will first be removed. This plant is being built by Kellogg.

Monsanto Chemicals Co., in Texas City, is supplementing its former ethane-cracking unit by an installation capable of producing 90-million lb. of ethylene a year, using as feedstock either butane, pentane, or natural gasoline, according to market fluctuations. This plant has been in operation for some time.

Basic difference between the production of acetylene and ethylene from liquid feedstocks is one of temperature. Acetylene production requires a substantially higher temperature. A feedstock of naphthas or natural gasoline will yield a maximum of ethylene (about 37%) at around 1,800F. At that temperature, the acetylene produced is only about 10% (diagram, page 31). At a temperature of 2,400F, however, acetylene production is high, about 39%, while ethylene production drops to 3% or 4%.

In some commercial ethylene installations, the 10% of acetylene is hydrogenated to produce additional ethylene.

This difference requires that two entirely different types of installations be built for the application of the same basic process.

For the pyrolysis of hydrocarbons to acetylene, oxygen and fuel gas are burned in a circular combustion chamber, where the correct temperature—as high as 2,900F—is maintained by introduction of steam, acting as a moderator. The feedstock is admitted into the "reactor" located immediately below the combustion chamber, and water is used to quench the reaction and minimize overcracking and carbon formation.

Phillips Petroleum Co. has developed a process called the "tangential reactor" process, somewhat similar to the one used by that company for making furnace carbon black.

Due to the lower temperatures—below 2,000F—involved in the cracking of liquid hydrocarbons to ethylene, the furnace for the production of ethylene is somewhat different. It is actually a combination of a reactor and a steam boiler. The hot gases leaving the reactor section are used to produce steam, in a boiler section immediately above. The liquid feedstock is thoroughly mixed with steam, and cracking takes place in a coil located inside the reactor.

In all these processes, the fractionation portion of the plant, after the reaction, is the most complex and the most expensive of the installation. The cost ratio varies from about 75-25 for a medium-size plant down to about 60-40 for a very large plant, such as Magnolia's Beaumont installation. This is due to the fact that the low temperatures (around—200F) needed for the separation involve expensive equipment.

Ammonia (Kellogg) or dimethylformamide (Phillips) is used as selective solvent.

For heat exchangers . . .

Welded Steel Tubes Regain Favor

Electric-resistance-welded carbon-steel tubes for heat exchangers are gaining favor among oil refiners.

An increasingly large percentage of welded steel tubing is being used today by refiners and petrochemical manufacturers for heat exchangers. The prejudice that had been built-up against such tubes since the last world war as a result of hastily made, unsatisfactory welded tubes ("zipper tubes") is gradually disappearing.

Welded steel tubes can be made to closer specifications and tolerances than seamless tubes, and are 10% to 30% cheaper.

As a matter of fact, welded tubes are being currently used in boilers, where steam pressures may go up above 2,500 psi. and metal temperatures may be as high as 1,500F. In heat exchangers, both temperature and pressure requirements are much lower.

What has won the refiners' confidence back to the electric-welding process of making carbon-steel tubes? In large part, it has been scientific and increasingly foolproof quality-control inspection adopted by most tube makers as part of their manufacturing routine.

In addition to the conventional "destructive" tests specified by the American Society for Testing Materials for welded carbon-steel heat-exchanger tubes (A-214 and A-334 Grade C), manufacturers are using certain "nondestructive" tests to inspect the tubes as they are being made.

The nondestructive tests used include:

- Hydrostatic pressure test, at pressures from 1,000 to 6,000 psi.
- Radiographic methods, such as X-ray or gamma-ray penetration of the tube walls.
- Magnetic particle test, where the tube to be tested is magnetized, and magnetic particles, dry or suspended in a liquid, are applied to it so that discontinuities, if any, are revealed by uneven particle patterns.
- Ultrasonic inspection, where the tube is subjected to high-frequency sound waves so that even the most insignificant flaws are revealed on an oscillograph upon which the sound waves are reflected.
- Electromagnetic induction test, in which the tube passes through an induction coil assembly developing a current in the tube; any defect is revealed by changes in the inducted current, read on the instruments of a detector panel.

Babcock & Wilcox Co., specialist in welded tubing, uses the submerged ultransonic method at its Alliance (Ohio) plant. Republic Steel Corp., another specialist, seems to favor the electromagnetic induction method.

"The problem of discriminating between genuine defects and harmless variables is the major problem of all nondestructive tests," says Black.

The problem is complicated by the fact that a variable which may be objectionable in one application of a tube may be perfectly acceptable in another application of the same tube.

Therefore, defects in tubes must be artificially produced and studied as a preliminary to the development of any worthwhile quality control method.

What's New
IN PROCESSING

The campaign to eliminate smog in Los Angeles has accelerated the development of apparatus to reduce objectionable fumes from automobile exhaust.

At the Air Pollution Control Assn. meeting in Los Angeles last week, Eugene Houdry, founder of Oxy-Catalyst, Inc., Wayne, Pa., displayed a catalytic exhaust purifier, which, he reported, removed over 80% of smog-causing exhaust fumes in extensive road tests.

Thompson Ramo Wooldridge, Inc., and Chrysler Corp. are joining in a cooperative project to produce an automotive exhaust afterburner which adds air to exhaust gases by means of a pump, heats the mixture, and burns it completely.

•

El Paso Natural Gas Co.'s $5.5-million natural gas plant at Opal, Wyo., will go on stream this month.

The new plant has a capacity of 267,000 gal. of natural gas liquid a day, including 122,000 gal. of propane, 83,000 gal. of butane, and 62,000 gal. of natural gasoline.

Construction and design were handled by Fluor Corp.

•

A special normal-size spark plug equipped with a built-in miniature electric pressure transducer, for the study of rumbling noises and power loss in gasoline engines, has been developed by Du Pont.

This instrument, Du Pont's C. A. Mellinger explained to the June meeting of the American Society of Mechanical Engineers, enables accurate analysis of surface ignition. The minute and extremely fast pressure changes that occur within the cylinders are translated into electrical impulses and recorded graphically on a tape. The electronic equipment is so sensitive that at 3,200 rpm., pressure changes which occur within 5 one-millionths of a second from one another can be studied.

•

W. R. Grace & Co. has acquired the business and assets of Hatco Chemical Co., in exchange for 126,000 shares of Grace common stock. Additional shares may be added, depending on the future earnings of Hatco. Involved in the deal is Hatco's Ford (N. J.) plant for the production of esters and synthetic lubricants for jet engines.

New Kidde carbon dioxide portables awarded highest U.L. rating!

Belleville, N. J. June 1—A spokesman for Walter Kidde & Company announced here today that six of the company's new portable fire extinguishers have been awarded the Underwriters' Laboratories highest ratings for their respective capacities. To those interested in fire safety, this means that, pound for pound, these new Kidde units have more fire-killing power than any other carbon dioxide extinguishers on the market today.

Available in 10, 15 and 20 pound capacities, in either squeeze valve or trigger models, these power-packed Kidde units feature new hose and discharge horn assemblies, which are responsible for their extra fire fighting ability. This hose-horn combination is also being offered as a replacement unit for existing 10, 15 and 20 pound carbon dioxide units, and when attached will upgrade their effectiveness equal to the new ratings.

For more information on these top-rated Kidde carbon dioxide portables write Kidde today.

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DEPT/Marketing

Oil Heat Catches On in Europe

The oil men who sell home heating oil in Europe are talking optimistically these days about the trend toward central oil heating in England, Germany, and many other European countries.

Many marketers told PETROLEUM WEEK last week that, in the past two years, European home owners have found that the greater convenience of oil heat outweighs the generally lower costs of coal. As a result, "I think 250,000 new oil-fired central heating plants will be installed this year," says one marketing coordinator in a major oil company.

The oil heat boom has meant greater sales for American oil companies marketing in Europe and for their European competitors.

Statistics from various countries document the expanding demand: In the United Kingdom, home owners burned 3.3-million bbl. of "gas oil and diesel oil" in their central heating plants in 1958—twice as much as in the preceding year, when the figure was 1.7-million bbl. This year, one major oil supplier expects the demand to rise to 4.4-million bbl.

Across the English Channel, the French landlords and private home owners will use 10.1-million bbl. of distillate for their central burners—many of them only two or three years old. Two years ago, in 1957, France's demand for home heating distillate was only 5.2-million bbl.

Marketers and oil burner equipment men agree that the demand for oil heat in Europe is just emerging; they feel that the potential in practically all of Europe in the immediate future is great.

A spokesman for Minneapolis-Honeywell Regulator Co., manufacturer of oil burner control equipment, says that in Germany, for example, only 20% of the potential market has converted to oil heat. In Switzerland, there is still a "fair market," he says, and in France the potential is "wide open." Only in Sweden, where oil heat has been popular for years, is the market nearing saturation.

Unlike the United States, the demand for home heating oil in Europe still represents less than half of the total distillate demand.

COMFORTABLE TEMPERATURE: That's what German home owners are promised if they switch to Esso heating oil.

In the United Kingdom, the 989,000 bbl. used in private homes, together with the 2,360,000 bbl. burned in apartment dwellings, is still insignificant compared to the 15.6-million bbl. used by diesel-engine road vehicles, for example.

Farmers, railroads, marine users, government organizations, and other industrial consumers used nearly 4-million bbl. of middle distillates in the United Kingdom last year—about 500,000 bbl. more than domestic consumers.

In France, the home heating market still represents only 25% of the total demand for distillate. In Germany, where the proportion is much higher, domestic consumers still comprise only about 49% of the total market for distillate.

It is because the home-heating demand is still comparatively minor compared to industrial demand that marketers and refiners in Europe today are not feeling much strain on over-all distillate supplies. "There's no shortage of distillate in Europe," says one industry spokesman. "The impact of home-heating hasn't hit the refinery yet," says another.

An important factor in the recent home-heating surge in Europe has been the promotional drive put on by the affiliates of Standard Oil Co. (N. J.).

Two years ago, Jersey spent several weeks studying ways to adapt American techniques to European conditions. Generally, Jersey's marketers found that Europe was about 30 years behind this country in switching from coal to central oil heating. Jersey has been attempting to overcome this lag in five or six years.

At the outset, Jersey's affiliates were confronted with a number of unexpected obstacles. In Switzerland, chimney sweeps kept damaging the temperature control mechanisms installed in the chimneys. And in Germany, Esso A. G. had to burn a house completely to the ground to prove to government observers that the oil inside the building's tank would not ignite (picture).

In many countries in Europe, Jersey engineers found that the heating plant was the last equipment to be installed in new homes—unnecessarily increasing the cost of burner installation. Another difficulty that Jersey encountered in Europe was the traditional belief that coal and

TO PROVE the safety of oil heat in homes, Esso A. G. set a house afire in Hamburg, Germany. The house burned down, but the oil in the building's tank did not ignite.

wood were the only sources of fuel available to the common man.

To overcome these obstacles, Jersey's marketers converged on Europe with advertising campaigns stressing (in a language understandable to local citizens) the convenience and dependability of oil heat (picture).

Several trends are at work to help boost European use of oil for home-heating:

- European coal distributors—many of them hampered by frequent coal strikes—are eager to switch part of their operation to oil.
- Since 1957, there has been a slow decline in the prices of heating oil in Europe. In Norway, for example, the going price of light heating oil has fallen about 2¢ per gal. since 1957.
- There is no competition in Europe from natural gas, and none is anticipated in the near future.

Seaway: No Boon To Oil Marketers

The St. Lawrence Seaway will not stimulate the sale of bunker fuel for ships using the Great Lakes, a spokesman for Hughes Oil Co., Chicago, told PETROLEUM WEEK last week. Despite the increase in Seaway traffic, an increase in fuel sales has been "hardly noticeable so far."

Hughes—a subsidiary of Sinclair—is the only distributor in the Midwest with marine refueling facilities.

Stiff price competition from Canadian distributors and world trade economics are the main factors in limiting the growth of the market.

Canadian suppliers in Montreal are selling fuel oil approximately 1.2¢ per gal. cheaper than Chicago suppliers, says Hughes. "They'll only buy here what they need to get them on to Montreal, where it's cheaper."

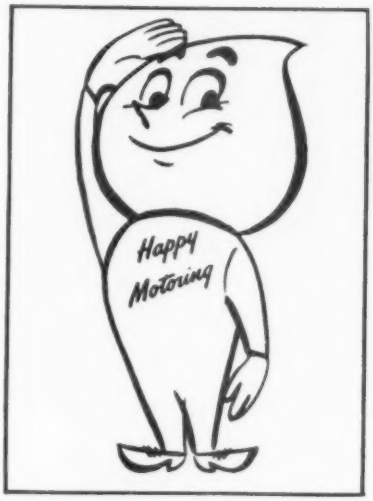
Furthermore, cargo ship captains will not needlessly fill their fuel tanks if the tonnage can be more profitably given to cargo pay-load.

This week the Seaway will enjoy a temporary stimulus from the U.S. Navy.

Hughes will refuel a flotilla of some 20 Navy ships, participating in the opening of Chicago's International Trade Fair. The Navy has contracted for 2.5-million gal. of special Navy fuel—at a cost of $213,000.

The largest ship in the task force will be the cruiser U. S. S. Macon, on its maiden voyage to Chicago. Navy officials predict that it will take about two hours to refuel the cruiser.

What's New / IN MARKETING



Enter: A New "Salesman"

The Esso Oil Drop, an effective advertising symbol in foreign markets for some ten years, is about to make its sales debut in the U.S.

Esso marketers expect the new trade mark to fulfill two major advertising aims: to present a company image of friendliness and service to motorists, and to provide continuity between campaigns.

Esso's market researchers, armed with surveys conducted in Europe, North Africa, and Latin America, say they have abundant reasons to believe that the perky little Oil Drop will become a helpful "salesman" here.

•

Conrad Hilton brought a second major oil company into the "Carte Blanche" fold last week. Union Oil Co. of California is now honoring the card-holders at its 4,500 service stations.

In February, Socony Mobil Oil Co. and its affiliates, Magnolia Petroleum Co. and General Petroleum Corp., signed with Hilton, bringing in a total of 32,000 service stations. Two weeks ago, Hilton signed Shamrock Oil & Gas Corp., a large independent marketer in eight southwestern and Rocky Mountain states (PW—Jun. 26'59,p47).

•

Seattle service station dealers, seeking higher prices for gasoline, are taking punitive measures against some dealers they regard as uncooperative.

Most stations now are selling regular gasoline at 35.9¢ a gal., including tax. Several stations of one major supplier that continued selling at 29.9¢, the level prevailing until prices were increased two weeks ago, have been visited by other dealers en masse.

One dealer had to call police to disband a group of 30 to 40 dealers who "called" at his station. Another complained that about a dozen automobiles, driven by other dealers, were blocking his pumps.

•

The airline industry is rapidly switching to jets: By mid-year, 87 airlines in 42 countries had ordered more than 1,000 pure jet and prop-jet airplanes, reports Esso Air World. This is in addition to the 500 turbines already in service. There are no new piston planes on order—for the first time.

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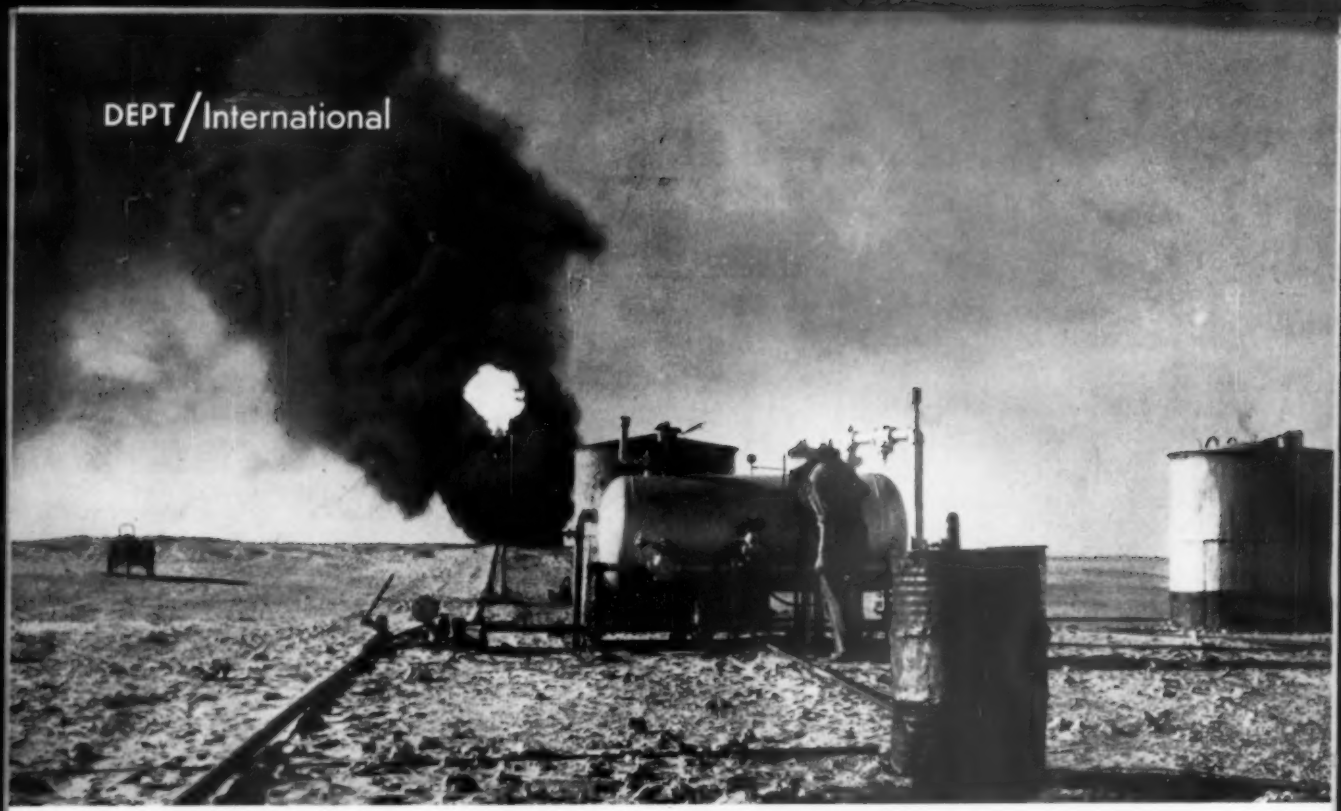


HUGE GAS FLARES burn day and night. But their only value is as beacons for anyone who might stray too far from camp.

France Is Developing Its Sahara Giant at

(This is one of a series of on-the-spot reports by a member of PETROLEUM WEEK'S *Paris Bureau)*

FRENCH SAHARA—It's already clear that Hassi Messaoud is turning out to be as big as a good-sized Middle East oil field.

Reserves per acre may be much lower, technicians here say, but it's compensated for by the size of the field—a productive area of over 620 sq. mi., so far.

Limits of the field haven't yet been determined by the two operators—SN Repal (Soc. Nationale de Recherches et d'Exploitation des Petroles en Algerie) and CFPA (Cie. Francaise des Petroles Algerie). But there are 28½ mi. from the northernmost producer, CFPA's OMG-57, to the southernmost, SN Repal's MD-7, and 21¾ mi. from MD-20 on the west to MD-8 on the east.

SN Repal is now drilling a long outpost 9⅓ mi. east of MD-8.

Geologists say the producing formation becomes clayey south of MD-7. But that's still not a sure sign the field's southern boundary has been reached.

Officially, reserves are estimated at 15.3-billion bbl. in place, of which 2.3-billion are primary recoverable reserves. In private talks, company officials are more revealing.

The two operating companies have been constantly harried by "irresponsible" political and newspaper accounts of "immeasurable reserves." And so they point to official figures. But geologists at the field say the primary recovery ratio is from 16% to 20%, with an over-all average of 17%. And they think that primary reserves can be estimated at almost 4.6-million bbl.

The recovery ratio could be materially boosted if a gas injection program were carried out.

This, petroleum engineers say, would raise the recovery ratio to 30%, which would represent a 3.4-billion-bbl. bonus in recoverable oil.

Of a total of 36 wells drilled at Hassi Messaoud, the score is 35 producers and no dry holes. One—which had only a small show—is being used as a test well.

Most of the wells are producing from around 10,900 ft. in what is presumed to be the Cambrian. (The formation was formerly considered as the Cambro-Ordovician, but lack of fossils in the Sahara makes positive identification difficult.)

Two new wells were completed in the past month—MD-20 and OMK-57. The latter is halfway between the northernmost well (OMG-57) and OM-81, indicating that the area in between is productive. Another well, OML-75, will be a producer, but is not yet completed.

Nine new tests are now being drilled, including two that have already reached the pay zone.

In 1960, the first year of expected big-scale production, output is slated to total 190,000 b/d from 50 wells—25 of them on SN Repal acreage and 25 on CFPA's. By 1962, some 100 wells are expected to produce 280,000 b/d.

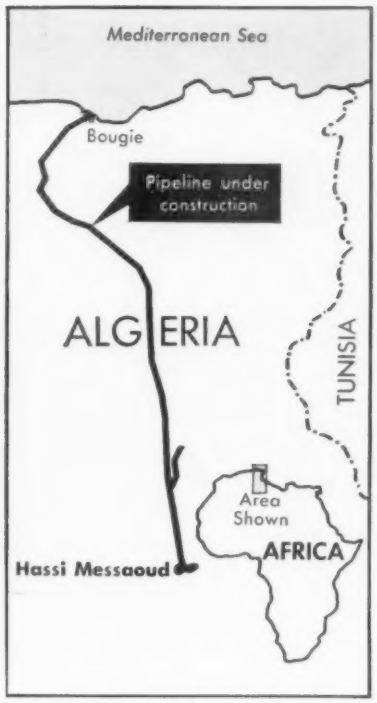
Productive capacity of individual wells drilled so far ranges from 196 b/d to 16,100 b/d, with an overall average of 5,250 b/d.

Hassi Messaoud has been developed at a fast clip.

SN Repal first tested its discovery well, MD-1, in July, 1956. Eighteen months later, a temporary 6-in. pipeline began to move 9,500 b/d to the railhead at Touggourt, 105 mi. to the north, on the first lap of a journey by rail and tanker to oil-short France.

This month, three years after discovery of oil, a 24-in. pipeline will be completed from the field to Bougie,

A 413-MI. PIPELINE from the field . . .



IS BEING LAID to the Mediterranean.

a Rapid Pace

413 mi. away, on the Mediterranean (map). When four pump stations are ready in October, 80,000 b/d will start flowing to the terminal. By the end of the year, throughput is slated to be 95,000 b/d, to be raised to 190,000 b/d in the first half of 1960, and to a planned 280,000 b/d in 1962. Some thought is already being given to another pipeline.

The two Hassi Messaoud concessionaires operate separately on their acreage—with typical French individuality.

Each has its own duplicate set of installations and camps, although they are linked by a joint-venture agreement that covers a good part of their Sahara grants. The companies do keep each other informed on progress, and they do cooperate on technical aspects of production. The companies also have a joint subsidiary, Sopeg, which builds and runs pipelines and pumping stations, and handles the oil until it's loaded on tankers.

Despite the fact that CFPA has a bigger chunk of the field, reserves are estimated as being equally split between the two companies.

Reason: Repal's pay zone is thicker—varying between 164 ft. and 370 ft., and averaging around 290 ft. And permeability is higher. Average thickness of the pay zone in CFPA's part is 196 ft., with a minimum of only a few feet in some areas, to a maximum of 459 ft. at one well.

SN Repal holds the southern ⅜ of the field, with CFPA holding the northern ⅝.

Over $100-million has already been invested in Hassi Messaoud. To get an idea of how much it costs to operate at the field you can double one company's expenditures. Each company puts up 49% of the exploration costs on its partner's acreage.

From 1947 through 1958, SN Repal spent $54.5-million for geological and geophysical work and for drilling 410,000 ft. of hole. In addition, another $8-million was spent on equipping Hassi Messaoud.

This year, the company has budgeted $14.1-million for installations, and some $25-million will probably be spent for drilling.

Each company has six heavy rigs at work at Hassi Messaoud. In addition, a light rig drills water holes.

Varying amounts of water are produced from wells drilled to almost 6,550 ft. in the Mio-Phiocne or Albian. MD-H-101, for example, can produce over 529,720 cf/d. Although it's sweet artesian water, its high mineral content makes it slightly salty. This gives a curious taste sensation when you drink salty coffee or mix Pernod with salty water.

SN Repal plans to drill some 100 holes on its concession over the next 25 years. Five or six heavy rigs will be kept at work until 1961. Then the company will leave two or three up to 1968, and one or two from then on. Double everything, and you'll get a good idea of how the whole field will be developed.

There are production headaches at Hassi Messaoud, however. For one thing, the reservoir isn't homogenous.

Permeability and porosity vary widely in different parts of the field. This will cause problems in both primary and secondary recovery.

And SN Repal and CFPA are trying to work out a plan for reinjection of at least part of the gas now being flared.

The gas-oil ratio is 1000:1. With an output of 280,000 b/d expected in 1962, the concessionaires will then have more gas than the 176.5-million cf/d now being produced at the big Lacq field in southwestern France.

If the gas is not reinjected, there's a danger the reservoir pressure will be dissipated in the early years of production.

Another problem is the Algerian war, which makes transportation and communications difficult. With the war going on directly north of the Sahara, the field must be protected by the military, and there's an armed civilian guard at each rig. No rebels have ever strayed as far south as Hassi Messaoud, but there have been skirmishes in other parts of the Sahara.

The average Hassi Messaoud well costs over $1.1-million, and takes about 80 days to complete.

Add to this a sizzling bottom-hole temperature of 250F and a pressure of 6,800 psi., and you can see that developing the field is no picnic.

SN Repal, which also discovered the huge Hassi R'Mel gas field to the north, is now carrying out a big exploration program in other Sahara areas. Latest discovery by the firm is a pinchout at Bordj Nili, some 25 mi. from the center of Hassi R'Mel. In a four-hour test last winter, BN-2 flowed 56 bbl. per hour from a 6½-ft. pay zone at 8,200 ft. in the Carboniferous. Significance: It's the first stratigraphic oil discovered in the Sahara, and it's the first oil found in the Carboniferous in the northern part of the desert. Next on the program is exploration between El Oued and Touggourt, starting in August. Seismic soundings indicate, the company says, that it may run into the same trend as at Hassi Messaoud.

Will Chile Denationalize Its Oil Industry?

SANTIAGO—A move to denationalize Chile's oil exploration and development, and open four provinces in the north to foreign oil companies, is still up in the air.

The provinces, which border Peru, Bolivia, and Argentina, are Tarapaca, Antofagasta, Atacama, and Coquimbo. They would be open to private Chilean capital as well.

Right now, the government's own company handles all oil development, although private companies, including Jersey Standard and Shell, are involved in marketing and pipelining (PW—Mar.6'59,p17).

A draft bill to open the provinces was passed by the House Mining Committee and given to the House Finance Committee. But it has been blocked by the Radicals, Chile's largest party, in a special assembly.

The bill squeaked through on a 7-6 vote in the mining committee. The oil segment of the bill, which calls for "rehabilitation of the north," was actually tacked on as an amendment by Conservative and Liberal deputies.

The bill would split the provinces into 28 zones, which would be checkerboarded with ENAP, the state oil agency. Alternate zones would be open to local or foreign oil companies and individuals. Bidders would have to deal with the government through an established firm in Chile, or through authorized agents with "wide powers." Chile's President, Jorge Alessandri Rodriguez, would have to sign all contracts.

The government would get a 50% share of net oil profits, but not less than 12% of gross production.

The government's profit share would be divided among the four northern provinces for the first five years. Thereafter, the states would only get 5%. The money would be administered through the government's Development Corp. (Corfo) and the Ministry of Public Works. The investment plans of these two agencies would be supervised by the Coordinating Commission for the North.

Under normal circumstances, the political setup of the Finance Committee would mean almost certain defeat for any denationalization move. But circumstances are far from normal.

Right now, the northern provinces are plagued by waning industrial development, scarcity of capital, mounting unemployment, a crisis-ridden nitrate industry, and many years of neglect by past administrations.

The northerners feel that a "flourishing" oil industry is the spark needed to get this "potentially rich" area back on its feet.

Telegrams and letters have been pouring in to senators and deputies from these provinces. And those who are against denationalization, faced with growing cries from their constituents, have been forced to promise something.

A counter-proposal has been made: Rather than let in foreign oil companies, let ENAP get a $50-million loan to speed up exploration in the north, and earmark 25% of copper earnings in excess of 25¢ a lb. to the state oil company.

This proposal may be approved in committee or even on the floor. But it is virtually certain to be vetoed by the President, who is opposed to "dividing up the national budget," and to authorizing state agencies to get private loans abroad.

Radical leaders have told the President that they will maintain their party's opposition to denationalization of Chile's oil fields.

But the President has pointed out that ENAP is in no position to conduct a full-scale search in the north.

Fernando Salas, general manager of ENAP, agrees, "because most of the agency's budget is destined for plant expansion in the Magallanes area." He appeared before the committee during debate and expressed ENAP's approval of opening part of the north.

A Communist Deputy claims denationalization will not provide a solution for the present unemployment situation. Expressing the view of the Popular Action Front and other left-wing groups, he says that between exploration and effective production of wells, a five-year period will elapse.

What's New / AROUND THE WORLD

HOLLAND—Plans for drilling offshore in the North Sea have been canceled by a Jersey Standard-Shell affiliate. The drilling platform was not completed in time for use in the North Sea and has been towed to Qatax in the Persian Gulf.

•

BRAZIL—New oil product distribution regulations seemingly give the government's Petrobras first chance at everything, while restricting any expansion of existing foreign distributors. The National Petroleum Council rules, recently published in a lengthy resolution, set up priorities for new distribution authorizations which heavily favor Petrobras and local Brazilian companies.

•

TRUCIAL COAST—An Iraq Petroleum Co. affiliate will not renew its concession in Fujairah, one of the Trucial Coast Sheikhdoms, when it expires in August.

•

VENEZUELA—Two gas injection projects for eastern Venezuela have been approved by the Ministry of Mines & Hydrocarbons. Texas Petroleum plans to increase crude recovery in its Mata field by 18-million bbl.

Through Junior Achievement, thousands of teenagers like those above learn just what is involved in running a business. Here officers of the Jacoco Company, St. Louis, put the finishing touches on Jacoco products—decorative trays made from huge coconut leaves. (L. to R.) Jan Beiersdorf, vice president; Gene Burnett, president; Pat Reynolds, secretary; adviser Art Greene, Standard Oil Company; and Jean Good, treasurer.

Young "businessmen" learn an old lesson

Decorative tray by Jacoco

You might not think a Junior Achievement Company, like the Jacoco Company, and Standard Oil have much in common. Jacoco makes decorative trays—Standard, hundreds of oil products. Jacoco has 14 employees—Standard, 46,000.

But as Jacoco Company Junior Achievers learn, Standard and Jacoco have quite a bit in common when it comes to money matters. So does every other business.

A business takes in just so much money during the year. Out of this amount it must buy raw materials and supplies, pay its employees and pay taxes (some direct—some indirect). Then, if it is well managed, it will have something left over to provide for future growth and to pay owners a return on their investment.

Take Standard Oil and subsidiary companies, for example. Last year we worked from January 1 through December 12 (346 days, to be exact) just to cover our costs of doing business. Of every dollar we took in, 94.8¢ went to satisfy our obligations to our suppliers, our employees, to local, state and federal governments for taxes and to cover charges for wear and tear.

This left us 5.2¢—the result of only 19 days' operations—for profit. About half of this was used to strengthen our company by expanding facilities to improve the products and services you, our customers, receive. We are continually at work to make oil more useful to more people than ever before.

The balance went to our 152,000 owner-shareholders as dividends. This marked the 65th consecutive year that Standard has paid dividends. A total dividend value of $1.687 per share was paid in 1958.

So you see, no matter what its size a company must watch its pennies carefully if it is to continue to give its customers better value for their money. That is our constant aim at Standard.

WHAT MAKES A COMPANY A GOOD CITIZEN?

One measure of good citizenship is a company's frankness with customers, employees, stockholders, the public. We at Standard try always to keep our neighbors informed—to show how we work, where our money goes and how we contribute to the progress of the communities in which we live and work.

* * *

If you would like a copy of our complete 1958 Annual Report, just write to Standard Oil Company, 910 S. Michigan Avenue, Chicago 80, Illinois.

1959 — 100th Anniversary of the Oil Industry — 70th Anniversary of Standard Oil Co.

STANDARD OIL COMPANY
(INDIANA)

STANDARD

THE SIGN OF PROGRESS.
THROUGH RESEARCH

with a 14-million cf/d plant. And Socony Mobil and Mene Grande jointly plan to increase recovery by 4-million bbl. with a 13-million cf/d plant at their Mata and Araibel fields.

•

INDIA—The government is reportedly planning to set up a lube plant on the west coast in the near future. India now imports around 225,000 tons of lubes annually at a cost of over $30-million.

•

ARGENTINA—The government's YPF reports that a Madrejones wildcat flowed 3,150 b/d of crude with 17.5-million cf/d of gas from 13,825 ft. The northern Argentina test is only 1,300 ft. from the Bolivian border.

•

SWEDEN—Shell has bought a 50% interest in Koppartrans Oljeaktiebolag, which has a 33,000 b/d refinery at Goteborg.

•

LEBANON—A 20-mi. loop section on Iraq Petroleum Co.'s Kirkuk-Mediterranean pipeline network was tied in last week, the company announced in Baghdad. The loop will boost throughput capacity by over 1-million tons annually. IPC's exports through the line are nearly 26-million tons annually.

•

ALGERIA—Phillips Petroleum Co. has announced that its newly awarded Hassi Chambi concession brings its holdings in the Sahara to over 1.4-million net acres in over 4.1-million gross acres. The new 148,-262-acre award is 390 mi. south of Algiers, and some 60 mi. southwest of Hassi Messaoud. Phillips holds a 25% interest, and is associated with two French companies—Copefa and Omnirex.

•

IRAQ—Poland has offered to take the Iraqi government's royalty crude in exchange for capital goods, according to the Baghdad Radio, quoting Economy Minister Ibrahim Kubba. He also said Poland has offered Iraq tankers to transport its royalty crude to new markets.

•

UNITED ARAB REPUBLIC—Syria's first refinery, a 20,000 b/d unit at Homs, will officially go on stream July 23. The $16.8-million plant, built by Czechoslovakia's Techno-Export, has already started test runs, using crude from Iraq Petroleum Co.'s Kirkuk-Mediterranean pipeline.

•

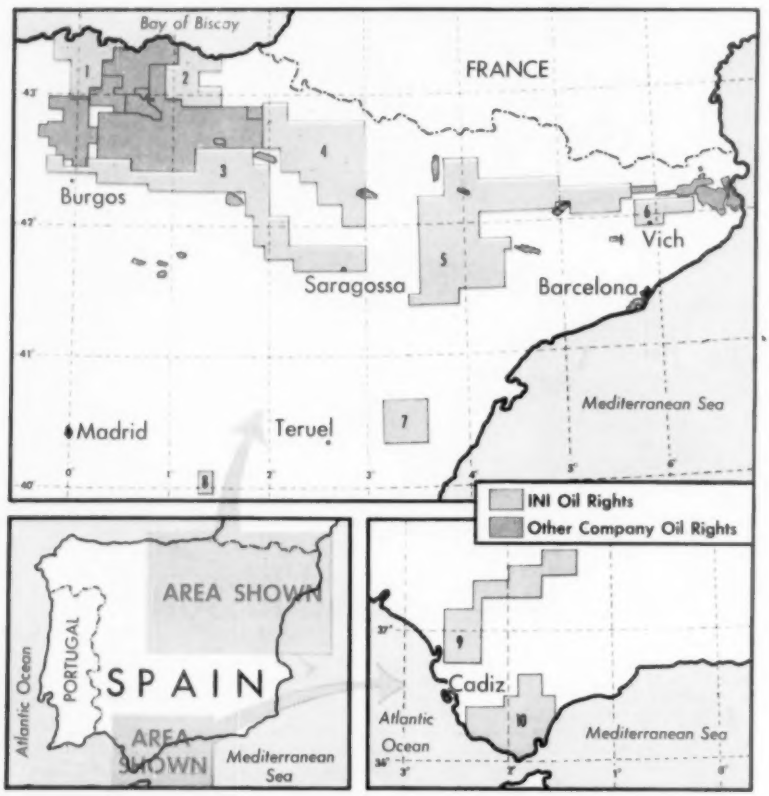
IRAQ—The government will soon set up a Higher Petroleum Institute to "prepare technicians in all branches of the oil industry to replace foreign technicians," according to Radio Baghdad. Graduates of Baghdad University's colleges of science and industry will be admitted for the two-year course.

•

VENEZUELA — Phillips Petroleum has extended its Lot 17 oil field in Lake Maracaibo 1,900 ft. to the south with a new well—LPG 16-9. It flowed 7,056 b/d from a thick Eocene pay section, and is the sixth well completed in the field. Deliveries are now being made. The oil varies from 34- to 36-gravity.

•

INDIA—The West Germany firm of Mannesman GmbH will help India set up a plant to make oil pipe at Roukela. The plant will help supply pipe for the projected 750-mi. pipeline from the Assam oil fields to two proposed government refineries.



Areas Outside These Are Open to Bids

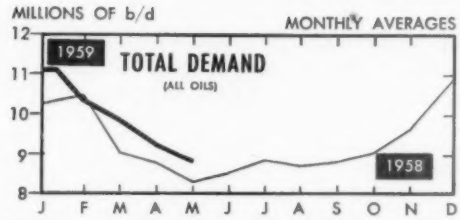
U.S. and other foreign companies interested in applying for concessions in Spain can ask for any acreage outside the tinted areas in the map. These areas include preferential acreage picked by the governments' Instituto Nacional de Industria (in red), and rounded-off acreage of companies exploring in Spain before the new 50-50 oil law opened the country to 100% foreign companies (in gray).

Newcomers must now ask for exploration permits, with boundaries limited by two longitude and two latitude lines, expressed in degrees and minutes without decimals. Under the law's new regulations, the longitude must be referred to the Madrid meridian which has been made zero degrees. Latitudes remain standard.

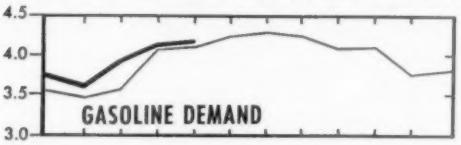
Permits can also be limited, in certain cases, by natural frontiers or coastlines. The longer side of a permit may not be longer than seven times the smaller side. Maximum area of a permit is 40,000 hectares, minimum is 10,000—with an 8% tolerance in the maximum.

PETROLEUM WEEK'S

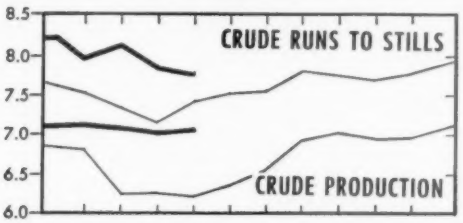
Fingertip Figures



TOTAL DEMAND
Latest 4-week average 8.965
Year ago 8.396

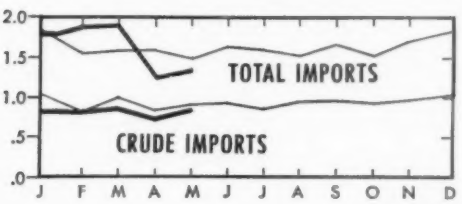


GASOLINE DEMAND
Latest 4-week average 4.419
Year ago 4.205



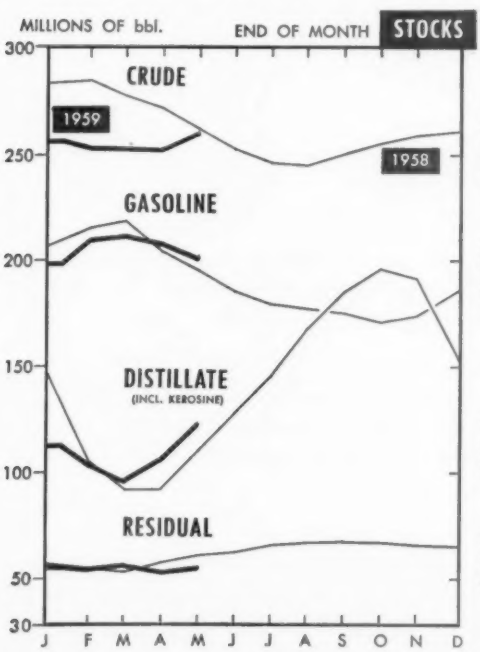
RUNS TO STILLS
Latest week 7.836
Previous week 8.000
Year ago 7.541

CRUDE PRODUCTION
Latest week 7.025
Previous week 7.017
Year ago 6.373



TOTAL IMPORTS
Latest week 1.648
Previous week 1.819
Year ago 1.529

CRUDE IMPORTS
Latest week 1.216
Previous week 1.255
Year ago .852



CRUDE STOCKS
Week-ended 6-20 265.7
Previous week 263.2
Year ago 260.7

GASOLINE
Latest week 199.3
Previous week 200.6
Year ago 186.5

DISTILLATES
Latest week 143.2
Previous week 138.5
Year ago 126.3

RESIDUAL
Latest week 53.8
Previous week 54.4
Year ago 63.7

Refinery runs dropped below 8-million b/d last week for the first time in three weeks, but they are still not down to what oil economists call "desirable."

Runs were trimmed by 164,000 b/d from the previous seven-day period, to 7,836,000 b/d.

Generally, economists have urged that runs at this time of year—in view of "normal" gasoline stocks and demand—should be held to 7.4-million b/d maximum. The nature of the stock build-up in gasoline is such now that a much lower run rate is needed.

The problem of excess gasoline stocks is inseparably tied to high refinery runs. For the past six weeks, runs have been near or even above 8-million b/d. With gasoline accounting for about half of these runs, gasoline production at the refinery has been running around 4-million b/d.

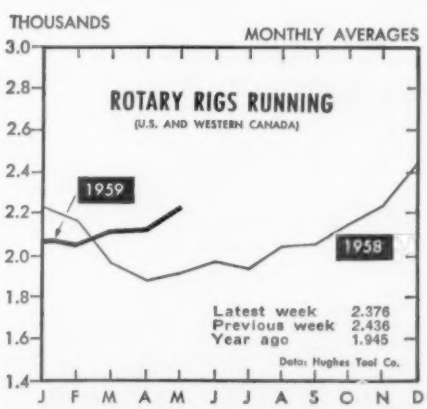
Since gasoline demand has remained in the neighborhood of 4.4-million b/d, it is obvious that—at current refinery runs—gasoline stocks cannot be decreased by very much more than 400,000 b/d.

If refiners were to cut back their refinery runs to the desirable rate of 7.4-million b/d, gasoline stocks would fall by 42-million bbl. over the next 60 days.

With this rate of 7.4-million b/d, gasoline production would drop to about 3.7-million b/d. With demand remaining around 4.4-million b/d, this would mean a decline in gasoline stocks of 700,000 b/d.

In this case, by the last week in August gasoline stocks would be down to 156-million bbl.—17-million bbl. below the year-earlier level.

Unfortunately, by late August the peak in gasoline demand is usually past, and the opportunity for correcting depressed price conditions would be missed.



The Market Trend

The Markets Fail to Show a Real Pattern

The markets are full of crosscurrents this week. Products that appear stronger in one area show new weakness in others, and vice versa.

Cheap gasoline is drying up at the Gulf. Independent refiners seem to be sold up on the product into the middle of July. Discounts look to be about 0.25¢ at the most, and these apply mostly to the top grades—98, 99, and 100 octane.

But a flood of off-price gasoline seems to be covering the Upper Midwest. Price cutting of 0.5¢ is reported in many markets. Weak spots include Detroit and the lower peninsula of Michigan, Chicago, Milwaukee, and Madison, Wis. One big retailer currently is getting product not from a refiner, but from a major-brand jobber in Detroit. And that never happens unless the price is pretty low.

Prompt No. 2 fuel looks about 0.25¢ stronger at the Gulf this week than last. About six cargoes have been purchased, mainly from independent refiners. The majors, too, don't seem to be pressing offerings as actively as they did a few weeks ago.

But New York harbor prices continue very soft. Last week, independent marketers reported losing barge accounts to majors who, they claimed, were selling No. 2 fuel at New York harbor at 8.9¢ a gal. This price is only 0.1¢ higher than the contract cargo delivered price. Also, it's only 0.775¢ above lowest Gulf Coast prices, and this difference is just about the price of chartering spot tankers for the voyage.

Bunker "C" fuel at the Gulf continues to be closely held, but you hear of low prices on school and hospital business at Buffalo and other ports on the Great Lakes. An interesting twist last week was the report of a refiner who backhauled heavy fuel from New York to South Texas to sell the oil into ships. His $2.09 cost at New York, plus a free backhaul, left a profit margin for the $2.20 sale into the marine trade.

Summing up, a marketer said, "What you need in this mixed-up market is a strong supplier with a weak price."

Gasoline Cuts In Many Spots:

Mobil Oil reduced its dealer tank wagon prices in many areas in Maine, effective June 26. The cuts ranged from 0.5¢ to 1.3¢ a gal., with the new tank wagon price at Portland off from 15.4¢ to 14.9¢.

Indiana Standard reduced its tank wagon prices in amounts up to 1¢ a gal. in eight Midwest states. There was no reduction in Chicago, but tank wagon prices there are subject to allowances up to 1.8¢.

Richfield is Low On JP-4 Opening:

Richfield Oil was low bidder to the Military Petroleum Supply Agency on a 30-million-gal. JP-4 opening last week. The company offered 6.3-million gal. at 8.3¢, a similar quantity at 8.5¢, and 11.3-million gal. at 8.7¢, all f.o.b. Long Beach, Calif.

Oil to Massena:

A cargo of bunker "C" fuel may move from the Neutral Zone in the Persian Gulf all the way to Massena, N. Y. The oil will come through the St. Lawrence Seaway, and is scheduled to lift in the Persian Gulf early in July.

The Market Place AROUND THE WORLD

Prices compiled for PETROLEUM WEEK by Platt's OILGRAM Price Service and National Petroleum News, McGraw-Hill Publications

All prices as of June 29

Bold face type indicates changes from previous week

KEY PRICES—REFINED PRODUCTS

(¢ per gal. except dollars per bbl. where $ is shown)

Western Hemisphere

U. S. Gulf Coast, cargoes
- **Gasoline, 98 oct prem** ..... **11.625↑-13**
- **Gasoline, 92 oct reg.** ..... **10.5↑-11.5**
- Kerosine 8.375-10.375
- **Heating oil, No. 2** ..... **8.125↑-9.875**
- Gas oil, 48-52 d.i. 8.125-10.125
- Fuel oil, bunker "C" $2.00-2.10

Caribbean, cargoes
- Avgas, Grade 100/130 ..... 15.25
- Gasoline, 93 oct research prem 10.75
- Gasoline, 87 oct research reg 9.875
- Gasoline, 79 oct research 9.125
- Gasoline, 70-72 oct motor method 9
- Kerosine 9
- Heating oil, No. 2 ..... 8.25
- Gas oil, 48-52, d.i. 8.5
- Fuel oil, bunker "C" $2.00

New York Harbor, barges
- Kerosine 9.65-9.9
- Heating oil, No. 2 ..... 9.15-9.4
- Fuel oil, No. 6 ..... $2.37

Okla-Group 3, northern shpt., bulk
- **Gasoline, 89 oct reg.** ..... **11.25↓-12↓**
- Kerosine 9.75-10.25
- Heating oil, No. 2 ..... 8.75-9
- Fuel oil, No. 6 ..... $1.60-1.80

Chicago, bulk
- Gasoline, 91 oct reg 11.5-11.75
- Heating oil, No. 2 ..... 9.5-10.85
- Fuel oil, No. 6 high sulfur 7.4-7.5

Los Angeles, rack
- **Gasoline, 88 oct reg** ..... **12.5↑-12.65**
- **Diesel fuel, PS 200** ..... **9↑-12↑**
- Light fuel, PS 300 ..... $2.80
- Heavy fuel, PS 400 ..... $2.15-2.35

Natural Gasoline, Grade 26-70
- FOB Group 3 ..... 4.5
- FOB Breckenridge, Tex. 4

LP-Gas
- Propane, Oklahoma (Group 3) 4
- Propane, Baton Rouge 4.625-5

Pennsylvania Lubes
- Bright stock, 25 p.t. 22
- 200 vis. neutral, 25 p.t. 21

Mid-Continent Lubes, Tulsa basis
- Bright stock, solvent 95 v.i. 23-24
- Neutral, solvent, 200-210 vis 19.5-20.5

Gulf Coast Lubes
- Bright stock, solvent, 95 v.i. 24
- Neutral, solvent, 200 vis 20.5

Eastern Hemisphere

Singapore (Pulau Bukom), cargoes
- Avgas, grade 100/130 ..... 16.5
- Gasoline, 79 oct research 9.75
- Kerosine 10.75
- Gas oil, 48 d.i. minimum 10.125

KEY PRICES—CRUDE OIL

(2¢ differential per deg., of grav. applies except as noted)

Western Hemisphere

United States (at the well)
- Mid-Continent, 36.0-36.9 ..... $2.77-2.97
- North Dakota, 36.0-36.9 ..... 2.62-2.87
- Texas:
  - Gulf Coast, low cold test, 26.0-26.9 ..... 3.50
  - Gulf Coast, Upper & Lower, 26.0-26.9 ..... 2.92-3.22
  - West Texas, sweet, 36.0-36.9 ..... 3.00
  - West Texas, N. M., inter., 36.0-36.9 ..... 2.93
  - West Texas, N. M., sour, 32.0-32.9 ..... 2.71
  - East Texas, flat 3.25
  - Mirando, 28.0-28.9 ..... 3.31
- Illinois Basin, flat 3.00
- Pennsylvania Grade, Bradford dist., flat 4.25
- California, Signal Hill, 21.0-21.9 ..... 2.50-2.54†
- North Louisiana-Arkansas, 36.0-36.9 ..... 2.77-3.02
- Wyoming, sweet, 36.0-36.9 ..... 2.85-2.90
- Wyoming, sour, 32.0-32.9 ..... 2.63-2.71

Canada (flat prices, at the well)
- Acheson-Stony Plain (Alta.) $2.47
- Leduc-Woodbend (Alta.) 2.53
- Redwater (Alta.) 2.42
- Daly (Man.) 2.21
- Smiley (Sask.) 2.18

Venezuela (Cargoes, FOB lifting port designated)
- Cumarebo, 47.0-47.9, Tucupido $3.34
- San Joaquin, 41.0-41.9, Puerto la Cruz 3.10
- Oficina, 35.0-35.9, Puerto la Cruz 2.78-2.80
- Tia Juana, Medium, 26.0-26.9, Amuay 2.30
- Bachaquero, flat, Las Piedras 1.73-1.88
- Tarra, 38.0-38.9, San Lorenzo 2.83
- Lagunillas Heavy, flat, Cardon 2.10

†Differential per deg. of grav. varies.

Eastern Hemisphere

Middle East, Persian Gulf (Cargoes, FOB lifting port)
- Arabia, 34.0-34.9, Ras Tanura $1.89-1.90
- Safaniya, 27.0-27.9, Ras Tanura 1.50
- Iran, 34.0-34.9, Bandar Mashur 1.86-2.04
- Iran, 34.0-34.9, Abadan 1.81
- Iraq, 35.0-35.9, Fao 1.80
- Kuwait, 31.0-31.9, Mina-al-Ahmadi 1.67
- Qatar, 41.0-41.9, Umm Said 2.05
- Neutral Zone, Burghan, 23.5-24.4, Mina Saud 1.51
- N. Zone, Eocene-Ratawi, 20.5-21.4, Mina Saud 1.38

Middle East, Eastern Mediterranean
- Arabian, 34.0-34.9, Sidon $2.27
- Iraqi, 36.0-36.9, Tripoli, Banias 2.31

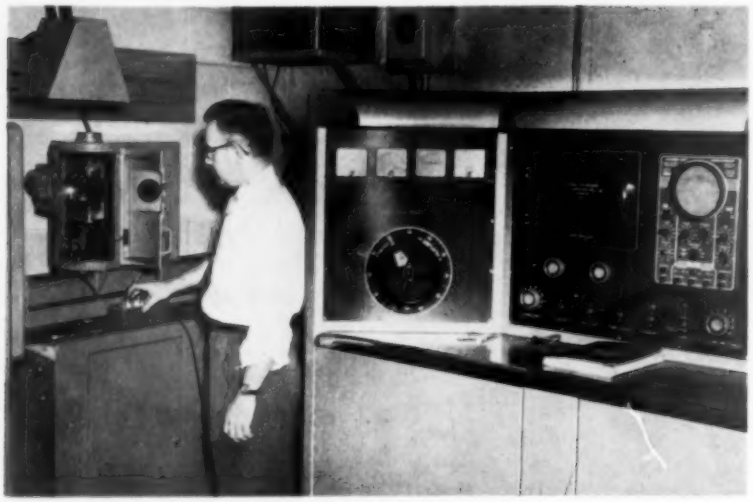
Far East, Cargoes, FOB Lutong, Sarawak
- Seria Light, flat $2.57

KEY TANKER RATES

(Last paid, per long ton, single voyage)

U.S. Gulf-New York, clean	(USMC—17½%)	$2.35
U.S. Gulf-New York, dirty	(USMC—32½%)	$1.92
NWI-USNH, dirty	(USMC—60%)	$1.10
NWI-UK/Cont., dirty	(Scale—30%)	22/9*
Persian Gulf-UK/Cont., dirty	(Scale—70%)	20/10*
Persian Gulf-USNH, dirty	(USMC—75%)	$3.18

**Sterling.*



SPECTOGRAPHIC ANALYSIS of metals in pipeline compressor engine oil proves . . .

Lube Reveals Engine Wear

Pipeliners no longer have to rely on costly—often needless—overhauls of compressor engines to detect wear, says the American Gas Assn. A better detection method is analysis of the engine's lubricating oil.

In a report on a two-year study of the relation of wear in 84 engines to the concentration of metals found in their used lube oils, AGA concludes that test results have "demonstrated the feasibility of using lubricating oil analyses as a means of detecting increased rate of wear of engine components prior to failure in service."

Research was conducted for AGA by the Institute of Gas Technology. It was aimed at perfecting a detection technique that would be cheaper and more efficient than the regular summer overhauls performed by most natural gas transmission companies to assure reliable engine operation during the winter months of peak line use. It is generally conceded in the industry that seasonal overhauls are an expensive way to safeguard against possible mechanical failures.

AGA has found that compressor engine wear is definitely revealed in metal contamination of the oil used.

By correlating the contaminants found in the oil—and the concentration in which they were present—with the component elements of the engine surfaces subject to wear, the institute was able to determine which engine parts were wearing, and to what degree.

For example, the institute discovered that in several engines studied an increase in concentration of iron, lead, or tin in the oil pointed to "abnormal ring and bearing wear." This deduction, which proved correct, occurred several months before parts replacement was necessary.

Oil from a variety of types and makes of engines was analyzed. The contaminants most commonly found, and the information their presence revealed, were:

- Silicon—dirt in the oil, indicating a malfunctioning air cleaner.
- Iron—wear in cylinders and liners and general corrosion of the engine.
- Chromium—wear on chromium-plated rings and liners.
- Aluminum, copper, lead and tin—wear on bearing surfaces made of either aluminum or babbitt metal. Where aluminum is used for power cylinders, its presence may also show wear of those parts.

Twelve natural gas transmission companies participated in the project by sending monthly samples of oil from selected engines to the institute for study.

During the first year of the project, oil from 69 engines was analyzed. The engines were chosen to represent the types generally used in transmission service. All were gas-fueled internal-combustion engines, ranging from 500 to 3,000 hp. Seventeen engine models from five manufacturers were included, and 28 grades of oil were used.

On the basis of results of the first year's program, 60 engines were selected for the second year. Of these, 24 were retained from the first year, "either because of abnormal engine wear during the test period or because of unusually high oil contaminant levels for no apparent reason."

The technique used was "emission spectographic analysis."

At monthly intervals, 80 grams of oil were taken from each engine at a point ahead of the filter. Precautions were taken to prevent contamination by sludge and air-borne dirt.

A testing sample was prepared by mixing oil with an internal standard matrix solution. Heated to tar-like consistency, the oil was put under a spectograph for analysis.

Rotated on a disk under an Electrode and "excited" with a low-voltage, undirectional arc, the sample produces a spectrum band on a plate, which can be read to determine the quantity of each metal in the oil.

AGA warns that an engine's particular operating pattern and maintenance history must be taken into account to get accurate results.

Oil in an engine that has recently been fitted with new parts may show a high contamination level. Unless the analyst knows that the engine has just been refitted, he may suspect that it is wearing out, when in actuality it is "wearing in."

Texas Eastern Plans Trunkline Loops

A system of 30-in. loop lines will be added to the main trunkline of Texas Eastern Transmission Corp., Houston, to help it meet higher peak winter demand.

Cost of the lines will be about $49-million.

Final approval for the loops accompanied recent Federal Power Commission authorization for Texas Eastern to acquire 1-trillion cu. ft. of additional reserves through purchase of producing interests in Rayne gas field, Acadia Parish, La., at a cost of $134-million (PW—Jun.26'59,p8).

Construction will begin immediately, the company says, on a 14-in. lateral to its Opelousas (La.) compressor station from the Rayne field, a distance of about 22 miles.

"The amount of gas covered by this purchase . . . will allow us to help provide gas for future increases in demand for natural gas in areas as far . . . as New York City and . . . Boston," the company says.

What's New
IN TRANSPORTATION

Proposed federal standards for location of pipelines and other utilities along any portion of the 41,000-mi. U.S. Interstate Highway System are being prepared by the American Assn. of State Highway Officials.

AASHO expects the Commerce Dept.'s Bureau of Public Roads and the states to approve the standards as mandatory requirements by Aug. 1.

The regulations would affect crude, products, and gas pipelines. They would forbid longitudinal installation of pipelines within specified distances of highways, bar access roads from main highways or ramps to lines located outside these distances, and force relocation of lines that can be serviced only by using main highways.

•

Collins Construction Co., Port Lavaca, Tex., in a federal court suit, has charged Sharman, Allen, Gay & Taylor, Inc., Houston, with infringement of two of its patents covering underwater pipelaying methods.

Collins alleges certain methods covered by the patents were used by the Houston firm during the installation of two pipelines across the Mississippi River in 1958.

Questioned about Collins' charge, the Houston firm declined comment, saying it had referred the matter to its attorney.

•

The petroleum industry estimates it will need 40% more spectrum space in the next ten years for increased radio use for mobile and intracompany communications.

At a recent Federal Communications Commission hearing, API spokesmen testified that Texas and Louisiana radio frequencies are now "badly overcrowded."

•

A group of five Japanese companies have designed a large-size nuclear-powered oil tanker.

The tanker would be of 60,000 tons, 815 ft. long and 110 ft. wide. It would have a 28,000-hp. engine, and would be capable of a speed of 17.5 knots.

It would also have a conventional auxiliary boiler.

Plans have not yet been made to build the ship, but cost is estimated at about $14.1-million compared with about $10-million for a conventionally powered tanker of similar size.

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Partnership Dissolution

ACORD SUPPLY CO., LTD.

5005 Holmes Road
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Houston, Texas
10:00 A.M. (CST)
Registration Starts at 9:00
Inspection Beginning July 13

OILFIELD EQUIPMENT, PIPE, PUMPS AND OTHER RELATED EQUIPMENT

Due to the dissolution of a partnership, all of the assets of Acord Supply Co., Ltd. will be sold at public auction to the highest bidder. Wayne Cook Associates, Inc. has been commissioned to handle the sale. Items to be offered include Traveling Blocks, Blowout Preventers, Drill Collars, Center Latch, Side-door and Bottleneck Elevators, Flanges, Hooks, Kellys, Bushings, Pumps, Rams, Slips, Spiders, Swivels, Valves, Drawworks, Drill Pipe, Casing and Tubing.

EACH AND EVERY ITEM WILL BE SOLD TO THE HIGHEST BIDDER WITHOUT MINIMUM OR RESERVATION

The List Is Far Too Long To Cover Adequately Here But Will Include Such Items As:

1—1953 Willis Jeep
1—1956 Ford ½-Ton Pickup
1—1958 Olds Super 88

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8,400 ft. of 2⅞" API IF R-2 Drill Pipe
4,500 ft. of 2⅞" Hydril IF R-2 Drill Pipe
3,100 ft. of 3½" API IF R-2 Drill Pipe
3,000 ft. of 4½" Hughes XH R-2 Drill Pipe
and more

PUMPS AND MOTORS

6 WAK Waukesha Engine on Skids with clutch and PTO.
International PA 100 Motor on Skids with clutch, V belt pulley and V belts
LeRoi H2000 engine on skids
Worthington Power Pump with Waukesha 195 GK Motor
5—Gardner-Denver 6x6 Steam Pumps
Fairbanks-Morse 4x6 Power Pump with Chrysler Ind. Motor
Ideal 6¼x10 C 100 Power Pump with Waukesha GK 145 Motor
Gaso Power Pump, 7¼x12 Fig 2652 with 6WAK Waukesha Motor
and many others

As Well As:

Perfection Links, Weldless Bails, Safety Clamps, Drill Collar Slips, 2, 3, 4, 5 and 6 Sheave Traveling Blocks, cap. up to 500 tons; Crown Blocks, various size and make Blowout Preventers with Rams; various size Drill Collars, various size and type Center Latch Elevators, Bottle Neck Elevators, Side Door Elevators; Flanges, Slips, Rotary Tables, Drilling Spools and many other related items.

For brochure with detailed listing of equipment to be sold, contact

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Chicago Bridge & Iron Co. 2
Dowell ..... Cover 4
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Ethyl Corp., Chemical Div. 30
Hercules Tool Co. 29
Houston Oil Field Material Co. ..... Cover 3
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Schlumberger Well Surveying Corp. ..... Cover 2
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Mohawk 4-5800

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Mile High Center, 1740 Broadway
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DEPT/Personals

C. A. Phillips

J. McDonald

JAMES McDONALD has been named assistant general manager of Tidewater Oil Co.'s western division, and **CLIFFORD A. PHILLIPS** succeeds him as administrative manager of manufacturing. McDonald joined Tidewater in 1940, and in 1956 became assistant manager of Tidewater's Delaware refinery, then under construction. He assumed his most recent position in 1957. Phillips joined Tidewater in 1950 as associate engineer at the Drumright (Okla.) refinery. In 1956, he was named area supervisor of the desulfurization and hydrogen plants at the Delaware refinery. The following year, he became superintendent of crude distillation, fluid coking, and catalytic cracking there. Both men will be located in Los Angeles.

JOHN K. McKINLEY is the new assistant to the vice-president in charge of the research and technical department for Texaco Inc., with headquarters in Beacon, N. Y. He has been assistant director of research at Beacon since 1957. Before that, he was assistant to the management there.

K. E. ROTEGARD is the new financial and services coordinator of Gulf Oil Corp.'s domestic production department in Houston. He succeeds **Raymond K. Pearson,** who has been transferred to the company's general offices in Pittsburgh as assistant comptroller. Rotegard has been Gulf's district manager in Amarillo since 1957.

K. E. Rotegard

J. H. Picou

J. H. PICOU, director of marketing research for Atlantic Refining Co., Philadelphia, is also head of the company's newly combined advertising and sales promotion department. **Richard Borden** will manage the advertising division, and **E. R. Cox, Jr.,** the sales promotion division. Picou joined Atlantic in 1951, and has been director of marketing research since 1956.

JAMES W. VICKERS has been elected executive vice-president of Vickers Petroleum Co., Wichita, Kan., and **James A. Doctor** has joined the company as marketing vice-president, succeeding Vickers. Vickers joined the company's land department in 1952, and in 1953 was elected vice-president of the crude oil purchasing and pipeline division. He became a vice-president in 1957, and a director in 1958. Doctor was most recently marketing vice-president for Champlin Oil & Refining Co., Ft. Worth. He began his oil career as a service station attendant for Continental Oil Co. in 1933, and became director of sales administration for Conoco in 1948. Doctor joined Champlin as vice-president in 1954.

J. W. Vickers

O. L. Odale

O. L. ODALE has been named production manager for Shell Oil Co.'s Pacific Coast area. He has been production manager for the company's Denver area for the past five years, and before that, was general superintendent there. In his new position, Odale will direct Shell's production activities in California and the Four Corners region.

HARRY W. McANINCH replaces **E. E. Kirchhoff** as assistant director of employee relations at American Oil Co.'s Texas City refinery. Kirchhoff has been transferred to the refinery's mechanical department as a zone supervisor. McAninch joined American Oil as an engineer in 1948, and was assigned to the construction and maintenance division of the plant's engineering department. He became assistant chief refinery engineer in 1954. After that, he served as division supervisor in the thermal cracking division of the operating department. In 1958, he returned to the engineering department.

BEN C. BALL, supervisor of the bulk oil shipping unit at Gulf Oil Corp's Port Arthur refinery, transfers to Houston to join the staff of **B. H. Barnes,** vice-president of Gulf's domestic manufacturing. Ball's new assignment will cover work on costs and economic studies, on the departmental level. He started with Gulf at its Port Arthur refinery in 1949.

JACK W. BOONE has joined Fred L. Oliver & Associates, Dallas petroleum consulting concern. He will deal primarily with reservoir engineering. Boone has been an engineer for Stephens Oil & Gas Corp. at Lubbock.

R. D. McBrian

P. E. Hilton

P. E. HILTON, vice-president, is now director of domestic sales for Baker Oil Tools, Inc., in Houston, and **R. D. McBRIAN** will assist him as assistant domestic sales manager. Hilton was formerly Central division sales and service manager. Baker has formed three new divisions, Southern, Northern, and Western, from the area that was formerly covered by the Central and Western divisions. **C. C. Taylor,** formerly assistant Central division sales and service manager, will be Southern division sales manager, with headquarters in Houston. **R. L. Turner,** who was assistant Western division sales and service manager, will be Northern division sales manager, with headquarters in Denver. **G. M. Anderson** will continue as Western division sales manager, at Los Angeles.

MIDWEST PIPING CO. has named three new vice-presidents. The new officers are: **T. R. Taylor, Jr.,** formerly manager of the eastern division; **E. B. Stolle,** formerly manager of the Pacific division; and **Norman B. Champ, Jr.,** formerly assistant to the president. Midwest is a fabricator and erector of piping materials and systems with plants in Houston, St. Louis, Los Angeles, and Clifton, N. J.

PARKERSBURG RIG & REEL CO. has established a new subsidiary in Venezuela, called Parkersburg Rig & Reel Co. de Venezuela C. A. **Ralph M. Roberts** continues in charge of South American operations, with headquarters in Caracas. **D. B. Evans** is the new Parkersburg representative in Maracaibo, and **B. G. McDonald** the new representative in Anaco.

TROY C. STEDMAN is the new West Coast regional sales and service manager of the oil tools division of Cameron Iron Works, Inc., with offices in Bakersfield, Calif. Stedman has been with Cameron since 1951. From 1952 to 1958, he was in the oil tool division, sales and service, at McAllen, Tex.

EDWIN O. STAFFORD moves up to West Coast regional sales manager for the Dresser Mfg. Division, one of the Dresser Industries. Stafford, who has served as a Dresser sales representative on the Texas Gulf Coast since 1956, will have his new offices in Dresser's South San Francisco headquarters.

I. W. SHAW has been elected vice-president of production for Tex-Tube, Inc., Houston. He was most recently Tex-Tube's manager of operations. He joined the company in 1957 as manager of production. Before that, he was superintendent of the tube mills and drive shaft department in Detroit for Ford Motor Co.

I. W. Shaw

C. L. Roach

C. L. (Hal) ROACH has been elected vice-president in charge of all domestic operations for Houston Oil Field Material Corp. Roach, with the company for the past 25 years, was most recently in charge of Oil Equipment, Ltd., Homco's Canadian affiliate. Homco has also named six new division managers: **Warren Hollier** is the new manager of the Rocky Mountain division, with offices in Casper, Wyo. He has been a part of Homco's Rocky Mountain operation for the past six years. **Gene Webb** is the new Eastern Louisiana and Mississippi division manager, in New Orleans. He was most recently associated with Oil Equipment, Ltd. **E. C. Alford** is the Western Louisiana division manager, at Lafayette, and **R. M. (Wimpy) Freeman** is South Texas division manager, at Alice. Alford joined Homco in 1948 as district manager in New Iberia, La. Freeman has been with Homco for 20 years, and has held various supervisory and administrative positions. **C. J. Erwin** is the new West Texas and New Mexico division manager, at Odessa. He was most recently manager of export sales in Homco's New York office. **Don Burton** is the new manager of the North Central division, with headquarters in Oklahoma City. He was formerly with Associated Oil Field Rentals, a division of Homco.

D. MICHAEL CURRAN is the president of Curran & Co., Great Falls, Mont., a newly formed company which will build oil, gas, and water pipelines. Curran is a past president of M. J. Crose Co. Curran has announced that the new company has consumated a working agreement with H. C. Price Co., Bartlesville, Okla., covering foreign pipe construction. The agreement specifically excludes the United States, Canada, and Mexico.

D. M. Curran

W. C. Talbert

W. C. TALBERT becomes director of foreign sales for Mission Mfg. Co., with headquarters in Houston. He was most recently sales manager in London, for Mission Mfg. Co., Ltd. His new duties include direction of sales in all areas except the United States, Canada, and Mexico.

JOHN C. LaFAVE has joined Republic Supply Co. at Oklahoma City as a special sales representative. For the past four years he has been sales manager for Childers Mfg. Co., at Houston.

F. C. Myers

C. H. Myers

P. Bartley

CHARLES H. MYERS has been named industrial relations vice-president for Black, Sivalls, & Bryson, Inc., Kansas City, Mo. **FLOYD C. MYERS** is the new Houston vice-president, and **PAUL BARTLEY** manager of the oilfield equipment division, in Oklahoma City. Bartley succeeds Charles Myers, who was formerly vice-president and manager of the oilfield equipment division, in Oklahoma City. Floyd Myers was formerly vice-president and manager of oilfield sales and service in Oklahoma City. Bartley has been vice-president and general manager of Black, Sivalls & Bryson, Ltd., Edmonton.

Oil's Political Science Needs Study

IT IS ENCOURAGING TO NOTE that oil men for the most part are wasting little time reminiscing over the first 100 years of the industry's history. Fortunately, they are more concerned in this Centennial Year with what lies ahead for oil. As anyone can predict, demand for oil will continue upward, and the need for oil will exist for a long time to come.

The real thinkers are those who are taking stock on what the industry will have to do to continue to supply the nation's major source of energy. Some optimistic thoughts on probable advances in technological development are contained in the Centennial Issue of the API Quarterly.

• In drilling, John E. Brantly predicts the development of new down-hole machines, tools, and techniques that may make drilling unnecessary. Brantly, the first president of the American Assn. of Oilwell Drilling Contractors and retired president of Drilling & Exploration Co., forecasts the use of atomic, liquid, or dry-charge explosives to make hole.

He also predicts the possibility of using a flame or electric heat to burn holes into the earth—a technique being tried in shallow holes. He describes the addition of sonic vibration to standard drill bits as another promising technique.

• In secondary recovery, Ohio Oil Co. President J. C. Donnell II anticipates that within a reasonable period—perhaps ten years—the industry will devise new methods which will boost recovery of oil in place to as much as 45%—and in time to double that rate of recovery. The techniques, Donnell envisions, include use of sound waves, electricity, bacteria, chemicals, and atomic power.

Atomic science and electronics will play major roles in the progress of all branches of the industry, other experts predict. They foresee electronically controlled producing and pipeline operations as well as radiation processing techniques as developments of the near-term future.

THESE ARE NOT "BLUE SKY" PROGNOSTICATIONS. But if the industry is to achieve such advanced levels of scientific development, it must first take steps toward the reestablishment of free-enterprise operation.

The government is steadily moving into a position to direct some major activities of the industry. It now can, in effect, raise or lower available supply and control prices.

Engineering sciences are advancing rapidly in the industry. But the industry needs to take time to brush up on its political science.

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One of the tools that the Homco man uses in directional drilling is the Homco Combination Jar and Keyseat Reamer. This tool, designed and manufactured by Homco, primarily for Directional Drilling, prevents many a stuck string. There is no better insurance against stuck drill collars in keyseats than this tool. With reamer blades larger than the O.D. of the collars, when keyseats are formed the tool sticks instead of the collars. When this occurs it is easy to rotate to the right to jar down and out of the keyseat. Then the string is raised, rotated to the right, and the tool reams up through the keyseat.

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